

Java	118
Enterprise Java Beans	114
Network OS	102
Hardware	100

Figure 1A

Application	108
Transactional OS	106
Middleware	104
Network OS	102
Hardware	100

Java	C++	Cobol	Small-talk
CORBA	124		

Java	C++	Cobol	Small-talk
CORBA	124		
Network OS	102		
Hardware	100		
C	146		
TUXEDO	144		
Network OS	102		
Hardware	100		

Figure 1C

Java	118
Enterprise Java Beans	114
Network OS	102
Hardware	100

Figure 1E

Java	C++	Cobol	Small-talk
Windows DNS (COM/MTS)	134		
Network OS	102		
Hardware	100		

Figure 1B

Figure 1D

180

190

195

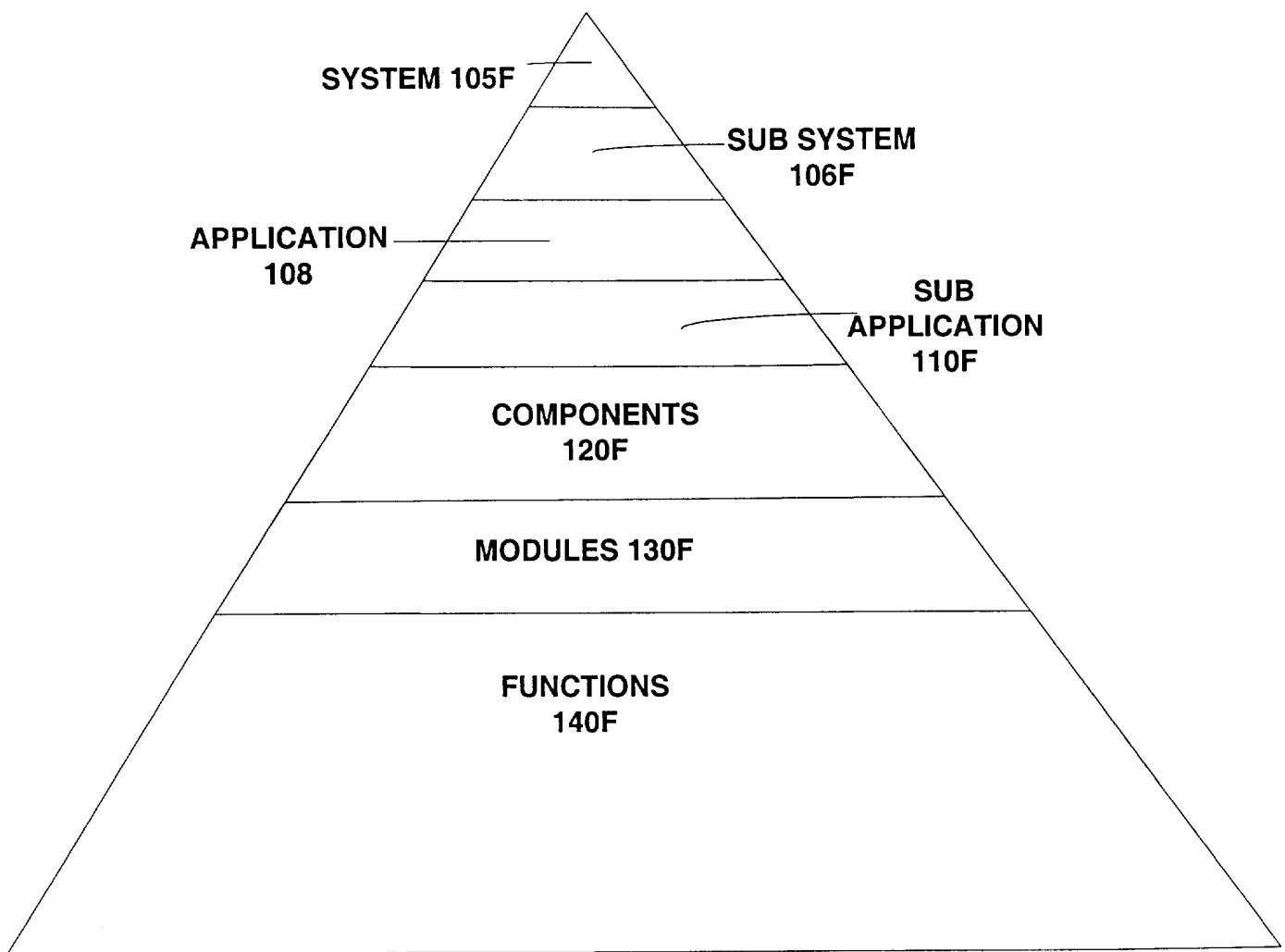
146

144

102

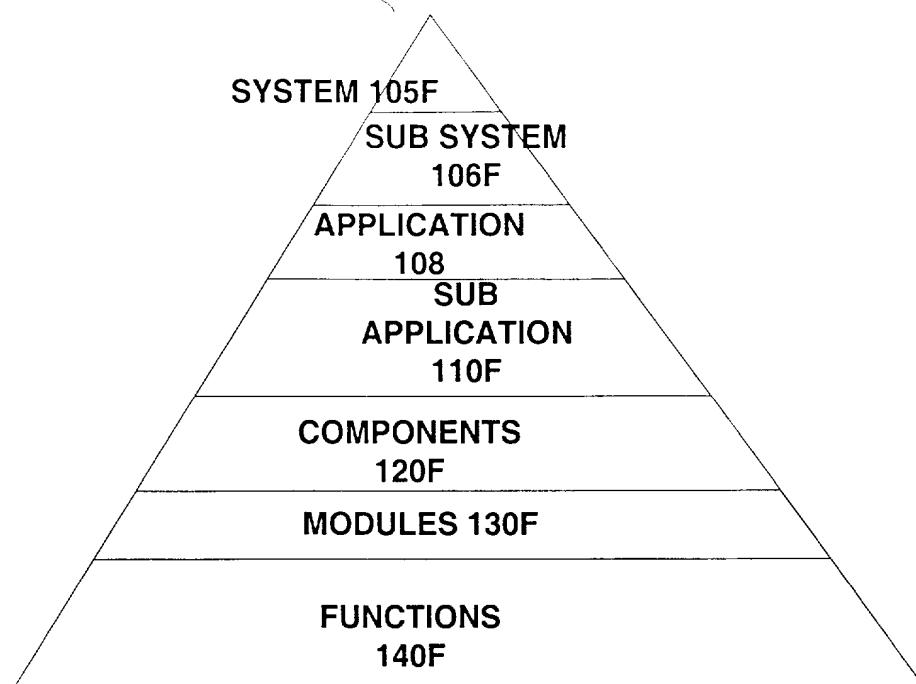
100

100F



**PRIOR
ART
FIGURE 1F**

100F



100H

ENGAGE

SYSTEM PART
NODE/CLIENT/TARGET
MACHINES
830

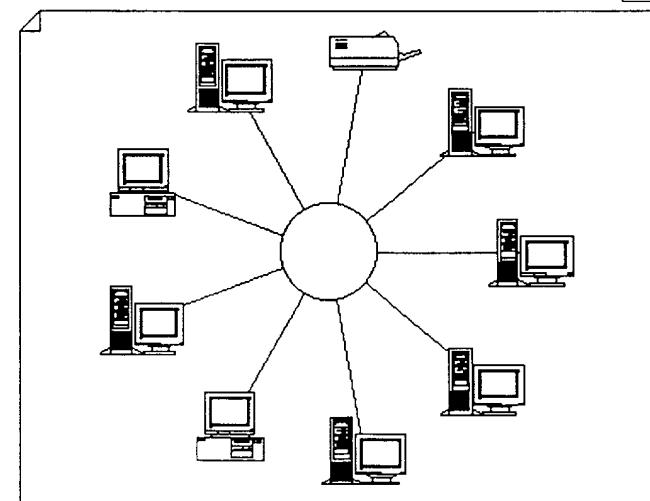


FIGURE
1G

100H

ENGAGEMENT
PAIR
110H

PART ID 120H	TARGET ID 130H

●
●
●

FIGURE 1H

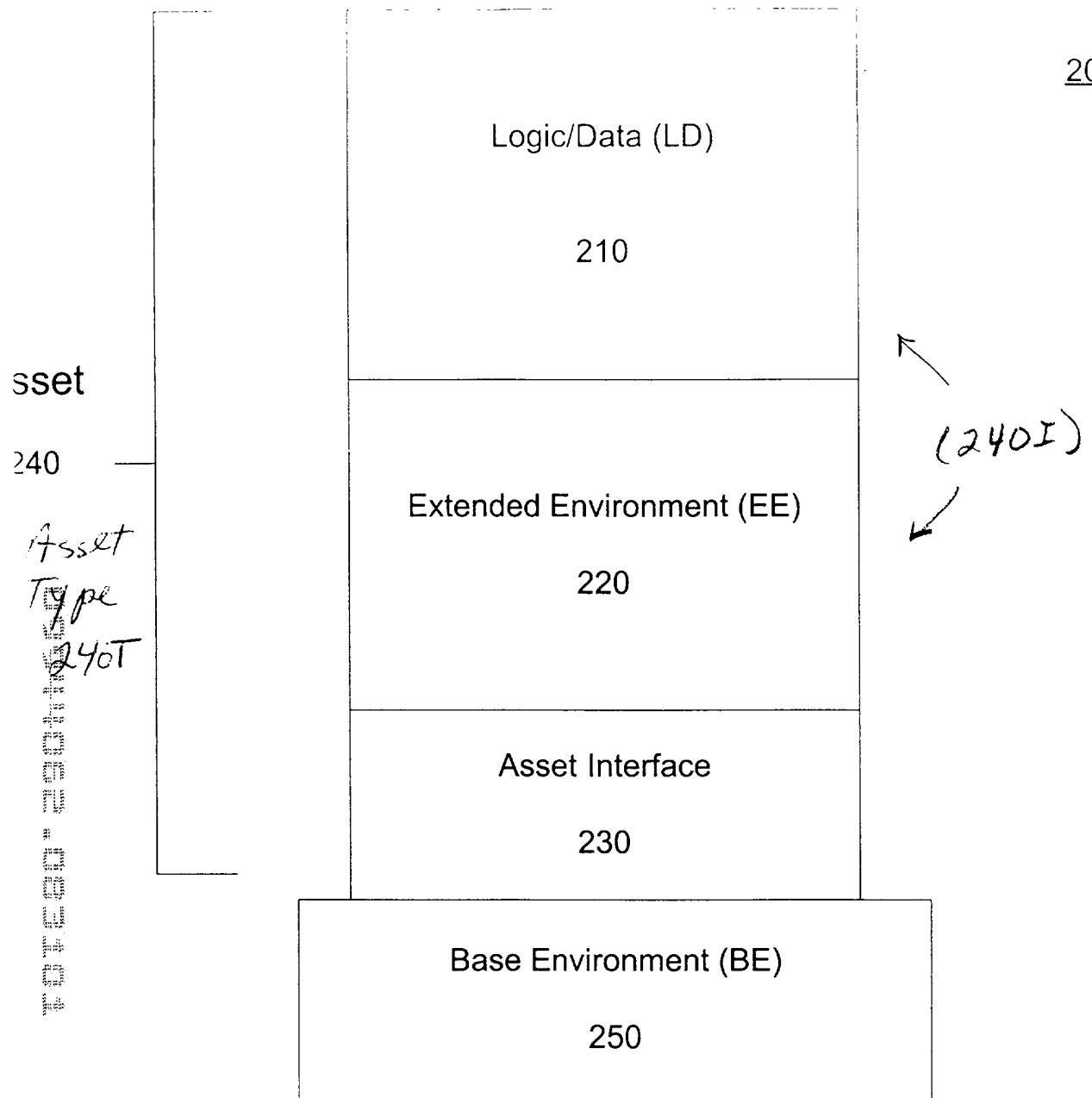


Figure 2

115 - 27 May 1951

Source 910

1600

240 Adäptor

200

220

Ent

30

Dr. C. A. Hildebrand

Asset Lifecycle

1st cycle 240 h

2401

**Extended
Environment
(EE)**

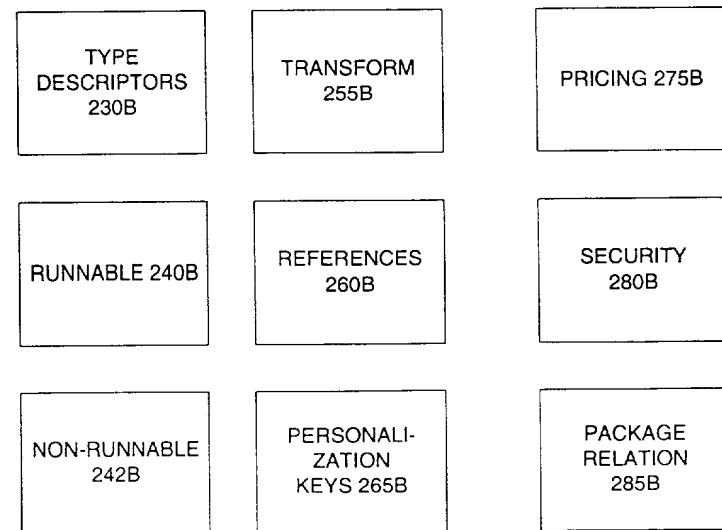
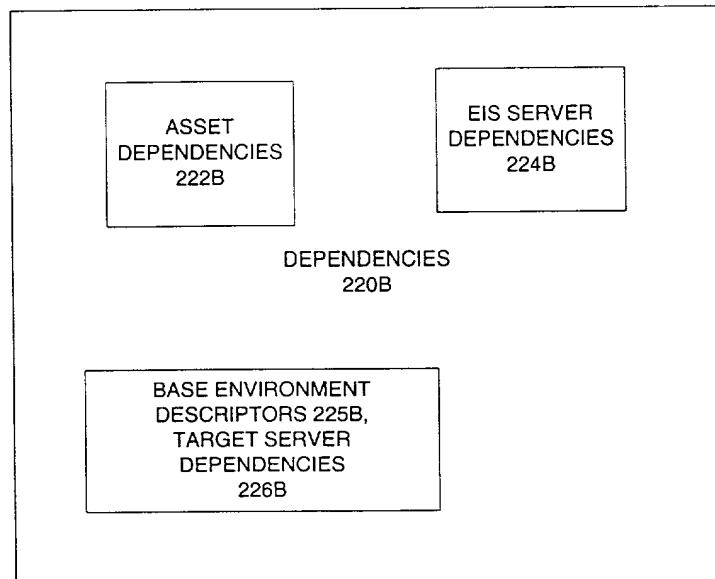
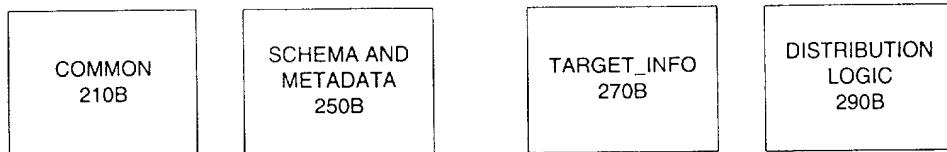


FIGURE 2B

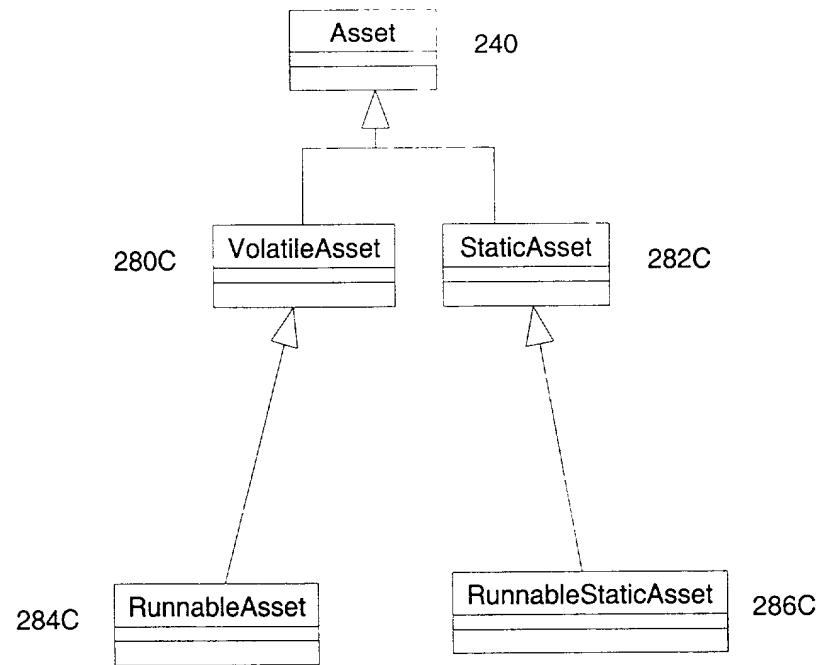
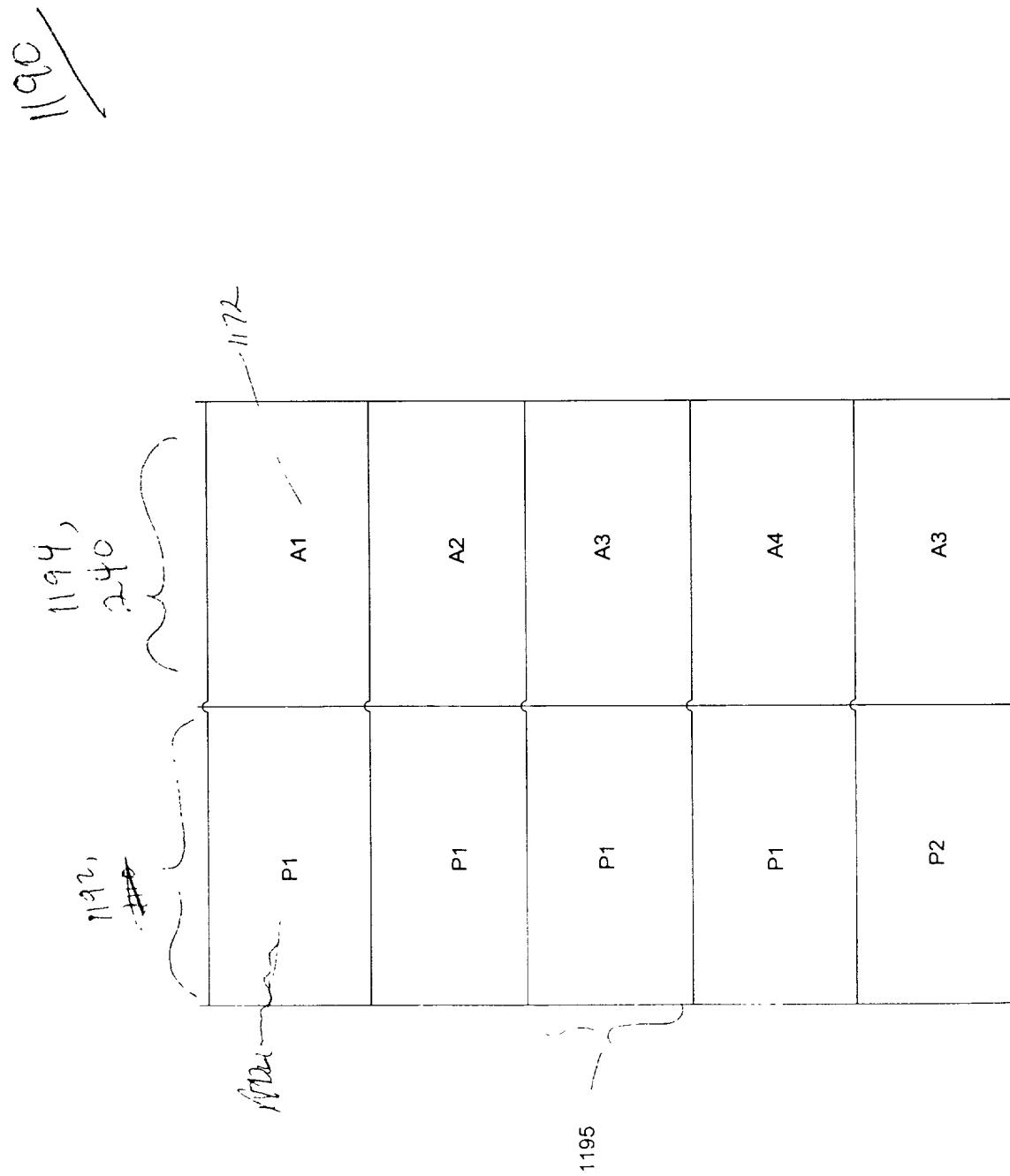


FIGURE 2C

1194 1195 1196 1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210



Package Content Data
Structure

Figure 3

Figure 4

1170

Asset ID	Location (Machine Location URL)	Name	Asset Type	Version (e.g. Time Stamp)	Other (Optional)
1172	1174	1176	1178	1179	1179A
				240T	
		A1			
			A2		
					A3

Asset
Definition Data
Structure

Asset Data
Structure

1370

Asset ID	Version
1372	1374
	1375

Figure 5

Client
Deployment
Queue

1380

Target/Client ID
1382
1385

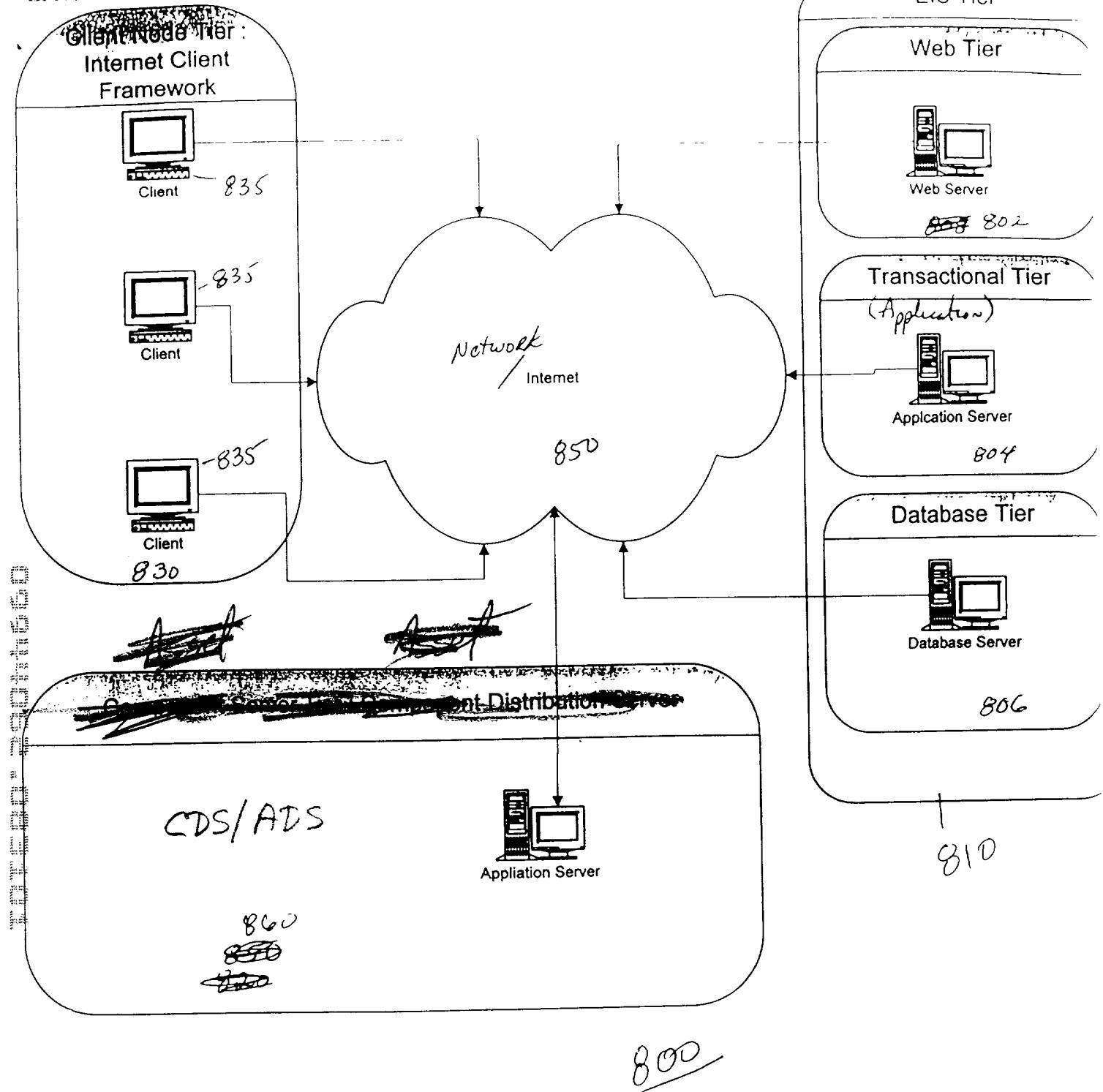
Figure 7

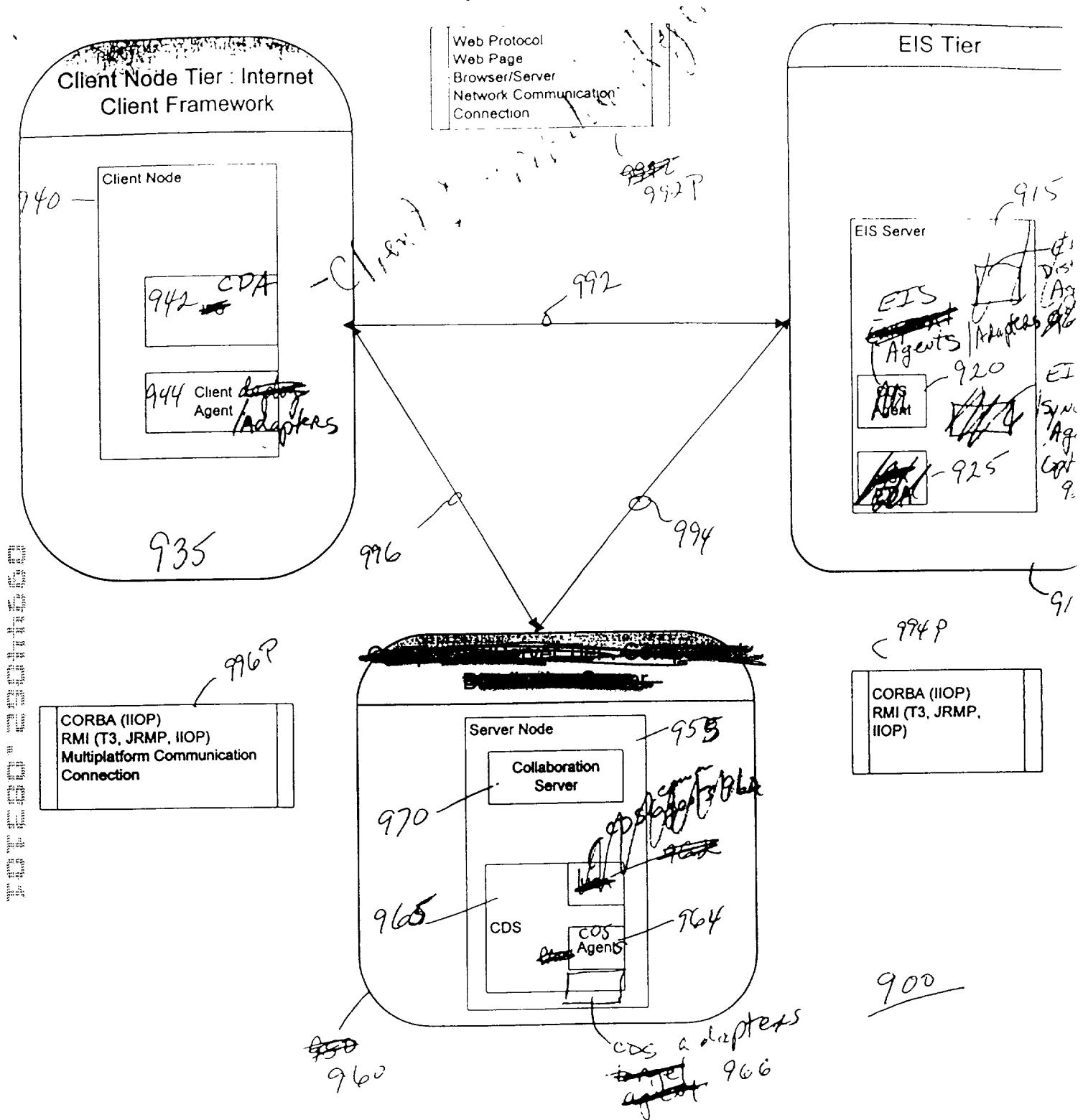
1390

Client ID	Client Assets
1392	1394
	1395

Client Asset
Table

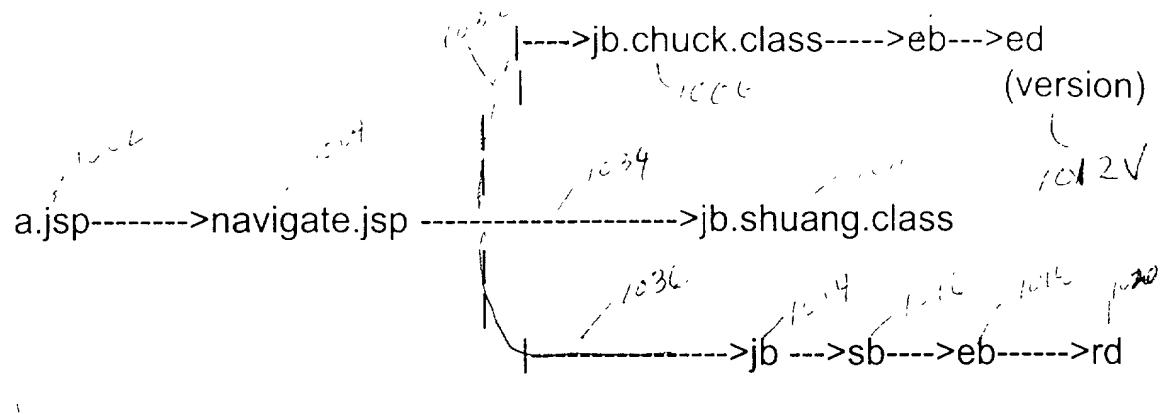
Figure 6





P1

1050E



1050A

Pp

Figure 10

the *Journal of the Royal Society of Medicine* and the *Journal of the Royal Society of Anatomy* are the best sources of information on the subject.

1100

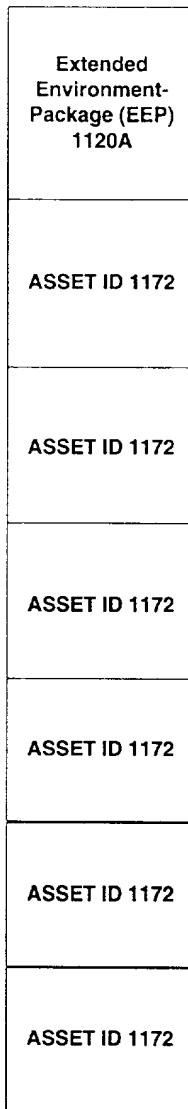
1105

Package ID	Package Timing 1150				Location (e.g. URL) 1120	Other 1163
	Delivery Start Time 1152	Delivery End Time 1154	Expire Time 1156	Remove Time 1160		
1110	1152	1154	1156	1160		
P1						

Figure 11

Package Definition Data Structure

1100A



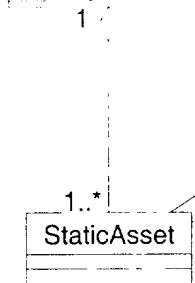
●
●
●

**FIGURE
11A**

1100B

1105B

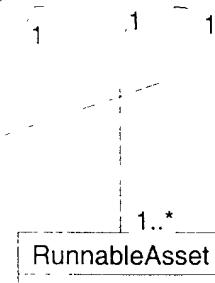
<<abstract>>
StaticPackage



282C

1110B

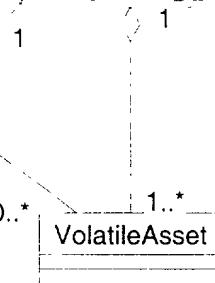
<<abstract>>
RunnablePackage



284C

1115B

<<abstract>>
VolatilePackage



280C

FIGURE 11B

Write Package Specification to Message Queue
1205

Read Package Specification Record From Message Queue
1210

Write Package Specification to Package Specification Database
1215

Check Delivery Schedule
1220

Go to Asset
Packaging
Process
1230

Delivery
Immediately?
1225

Schedule by Putting Record in Packaging Queue
1235

Package Specification Process

Figure 12

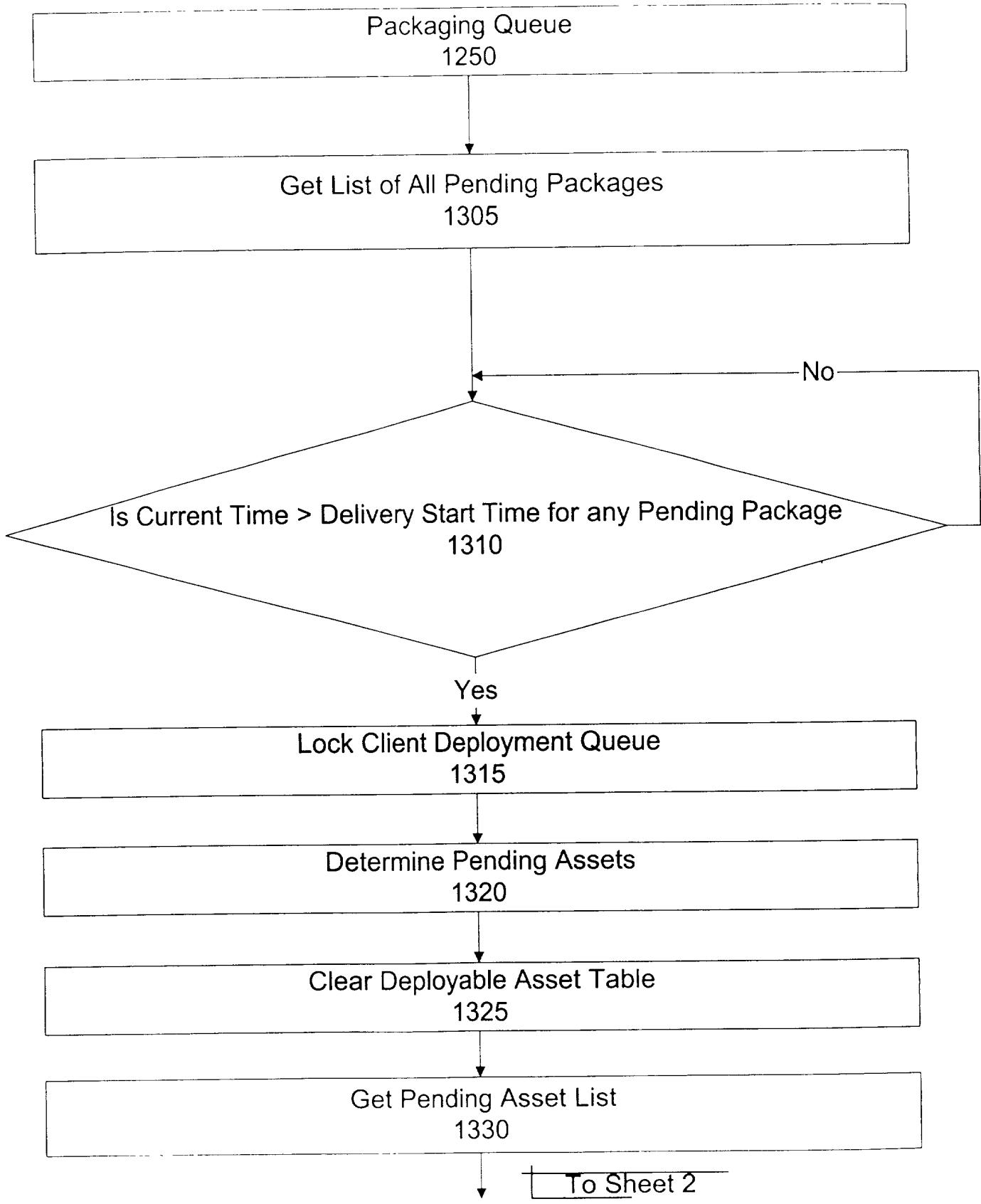
Package ID 1252	Start Time 1254

1255



Packaging Queue

Figure 12A



Asset Packaging Process

Figure 13 - Sheet 1

From Sheet 1

Call EIS Distribution Agent
1335

EIS Writes Current Version for Assets
Listed on a Deployable Asset Data Structure
1340

Get Deployable Assets From EIS
(e.g. EIS Export Adapter)
1345

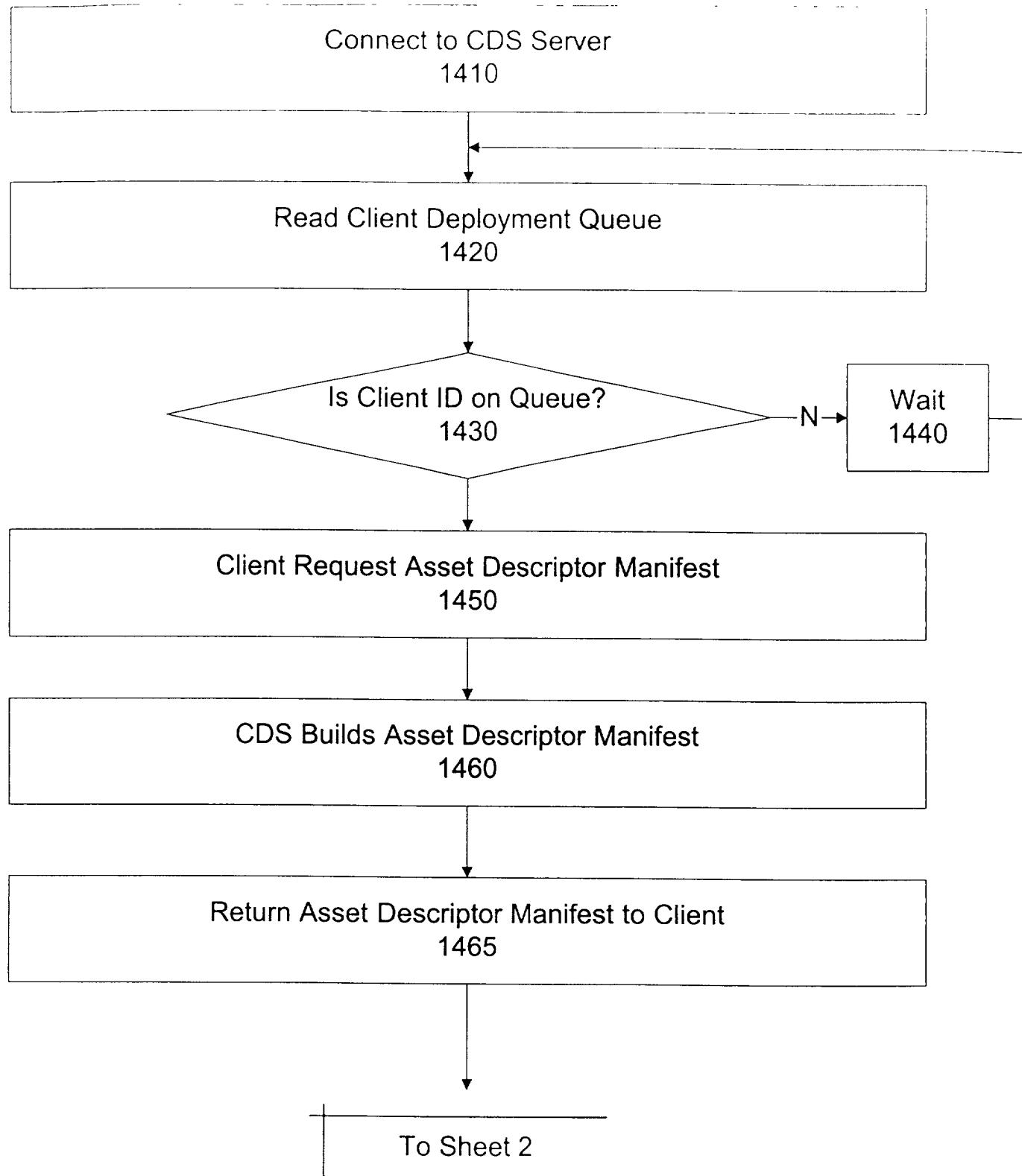
Store Deployable Assets in (CDS) Cache
(e.g. CDS Process Adapter)
1350

Write Client ID List to Client
Deployment Queue
1355

Unlock Client Deployment Queue
1360

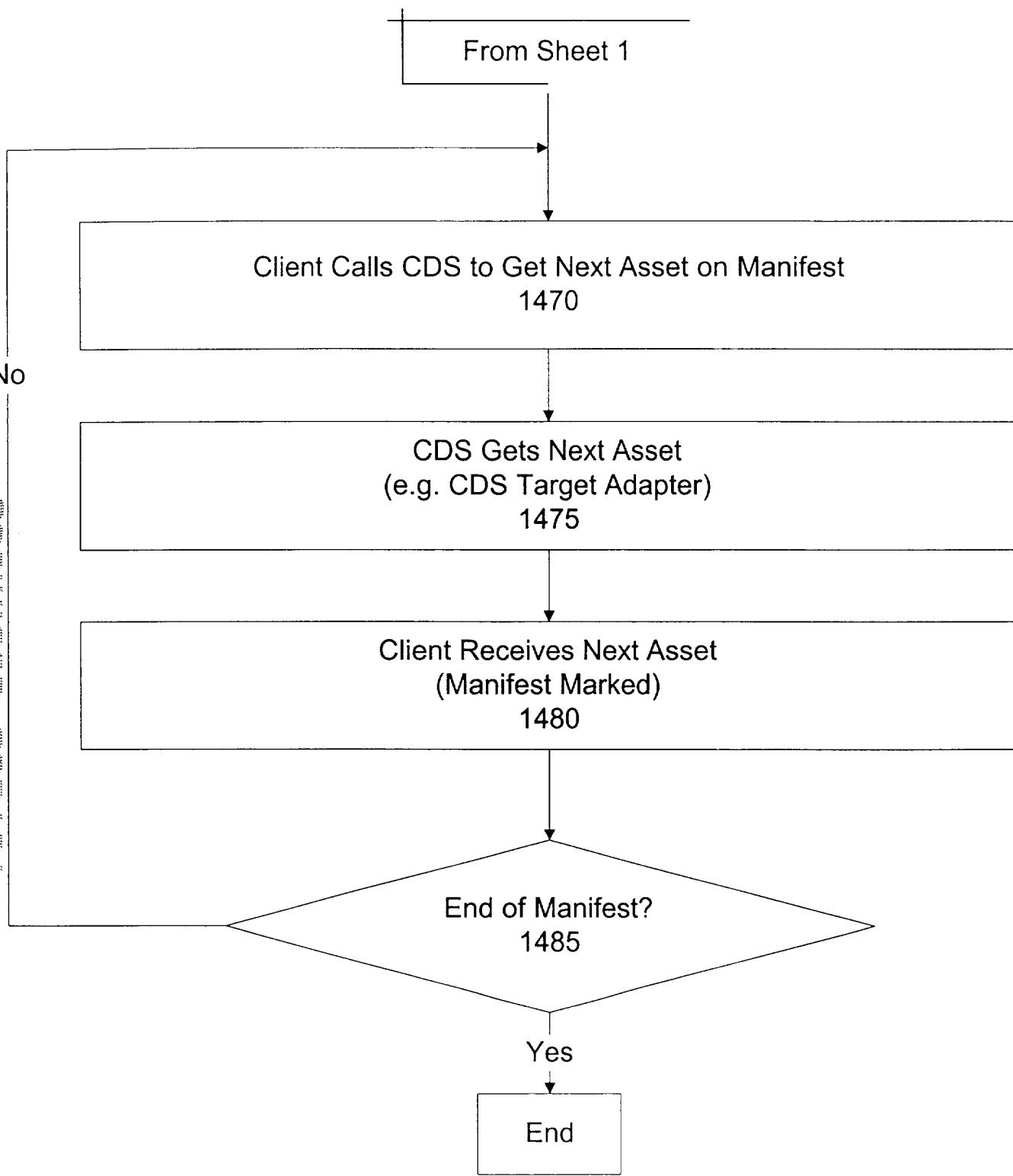
Asset Packaging Process

Figure 13 - Sheet 2



Client Deployment Process

Figure 14 - Sheet 1



Client Deployment Process

Figure 14 - Sheet 2

Client ID 1452			
Asset ID 1454	Offset 1456	Asset Type 1458 (Optional)	Cache Name 1478
			Version (Timestamp) 1479

1453

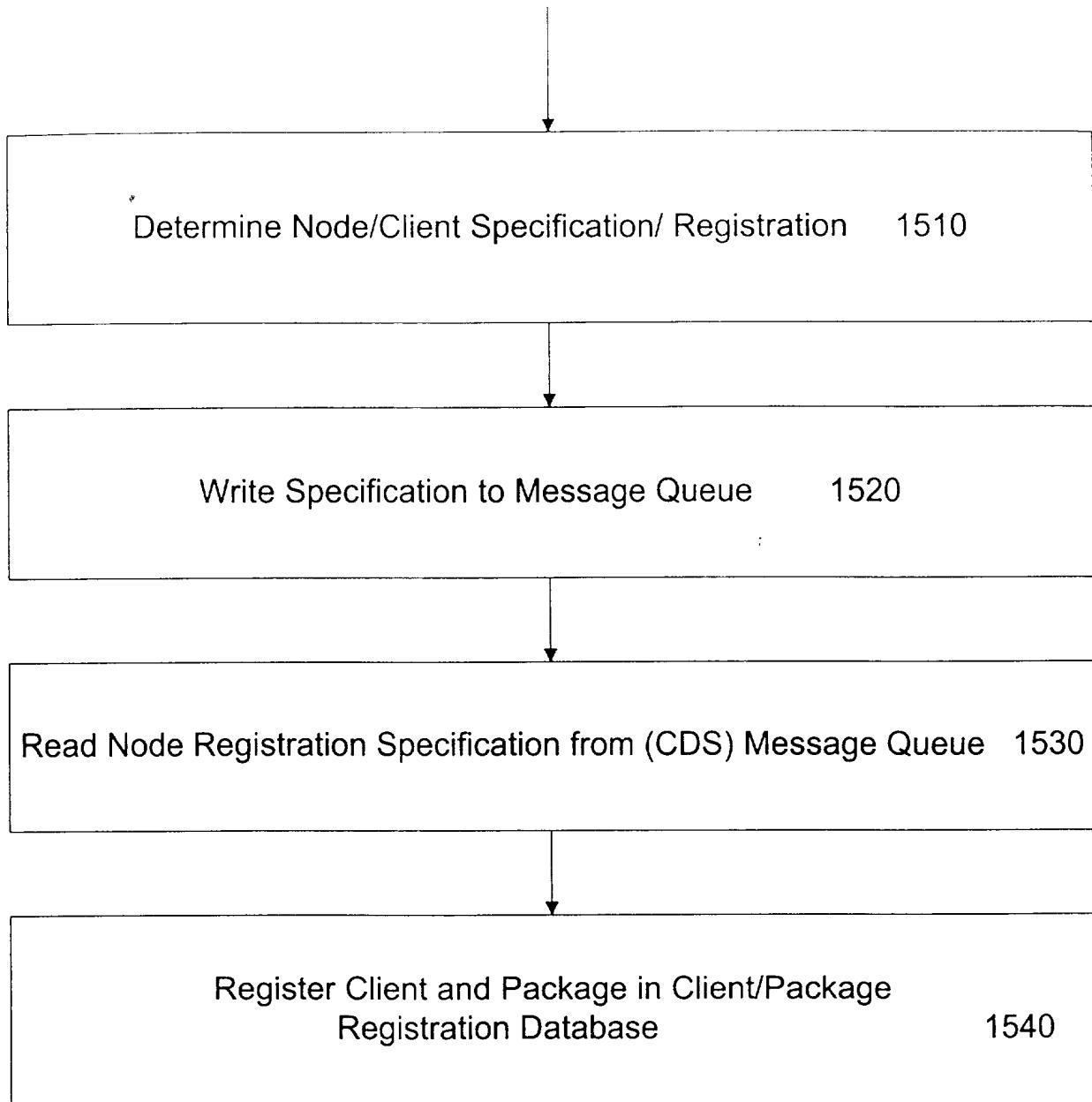
1490

Figure 14A
Asset Descriptor Manifest Data Structure

Client ID 1452	Asset ID 1454	Version (Timestamp) 1479
-------------------	------------------	--------------------------------

Client Asset Table

Figure 14B



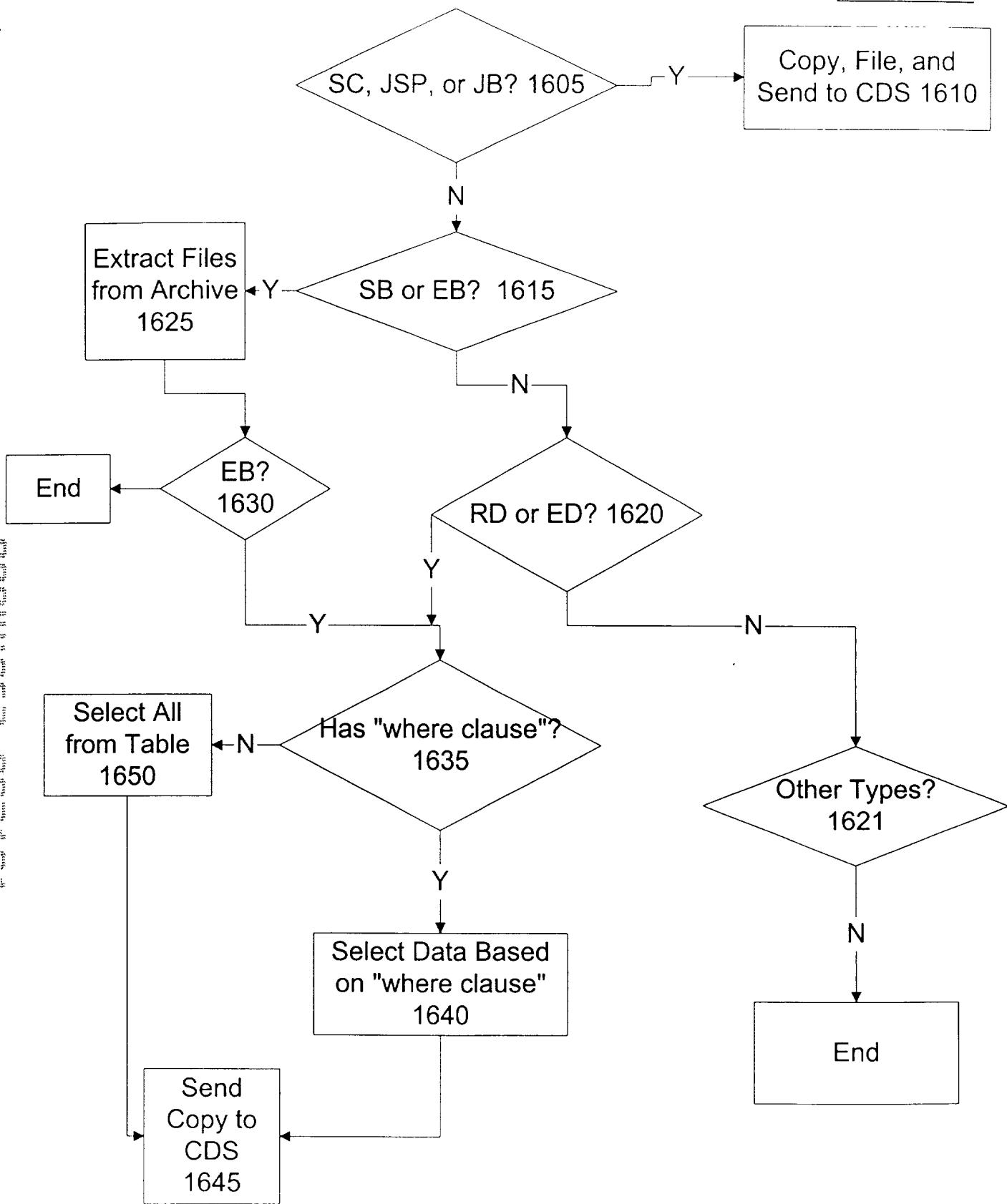
Node Registration Process

Figure 15

Node ID 1524	Package ID 1526

Node Registration Specification

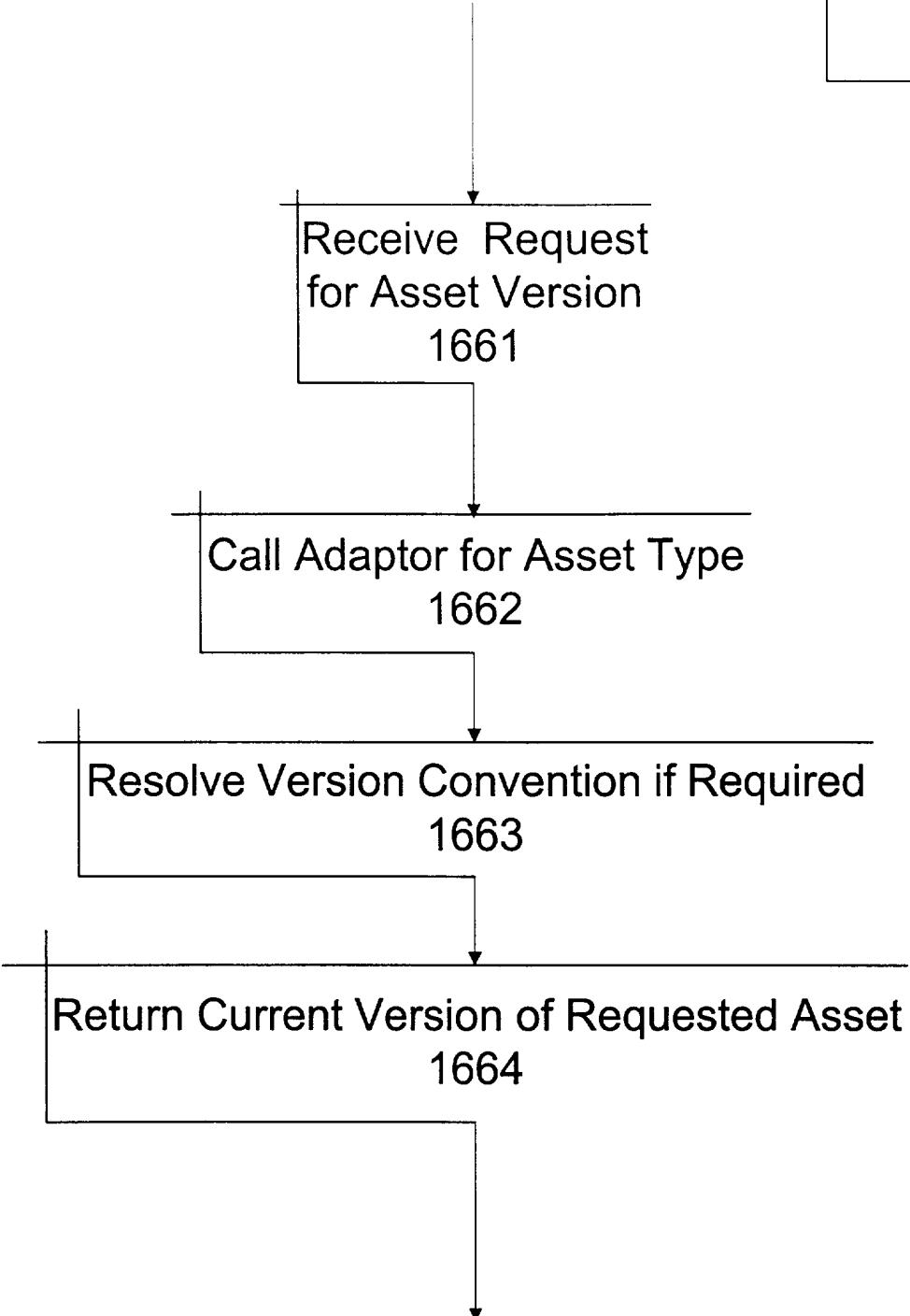
Figure 15A



Export Adapter Method

Figure 16

1660



Version Asset Adapter Process - VAM

Figure 16A

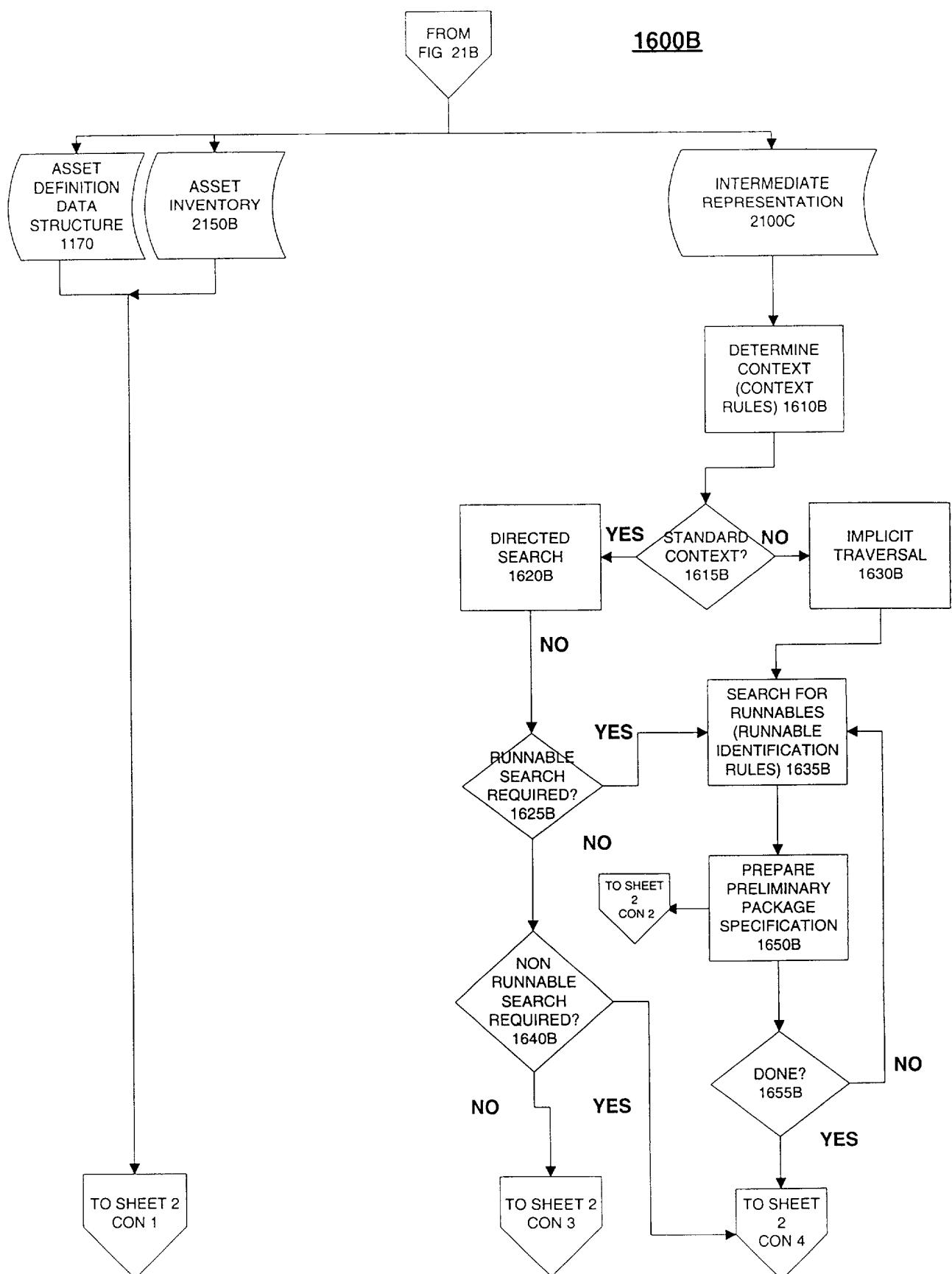
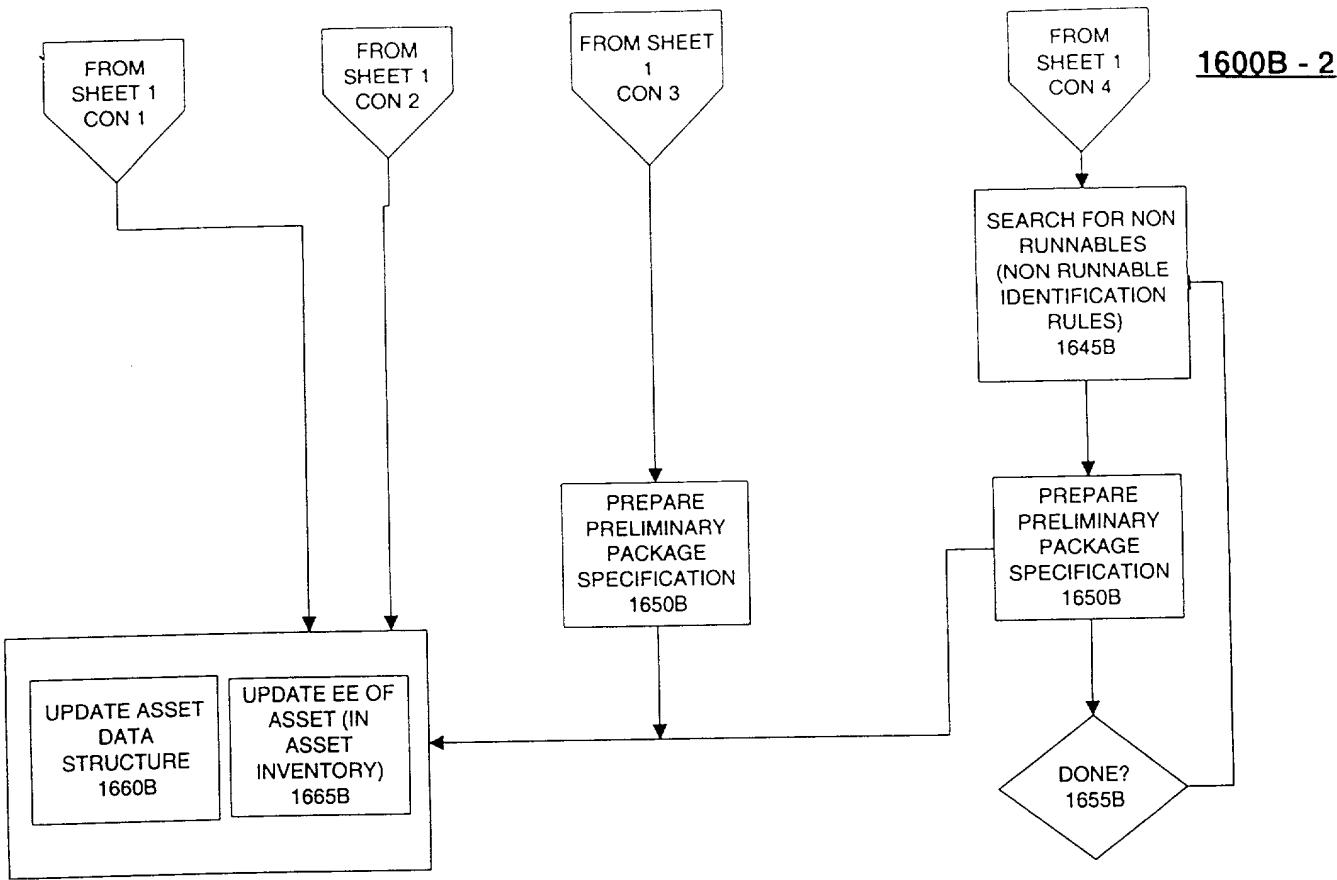
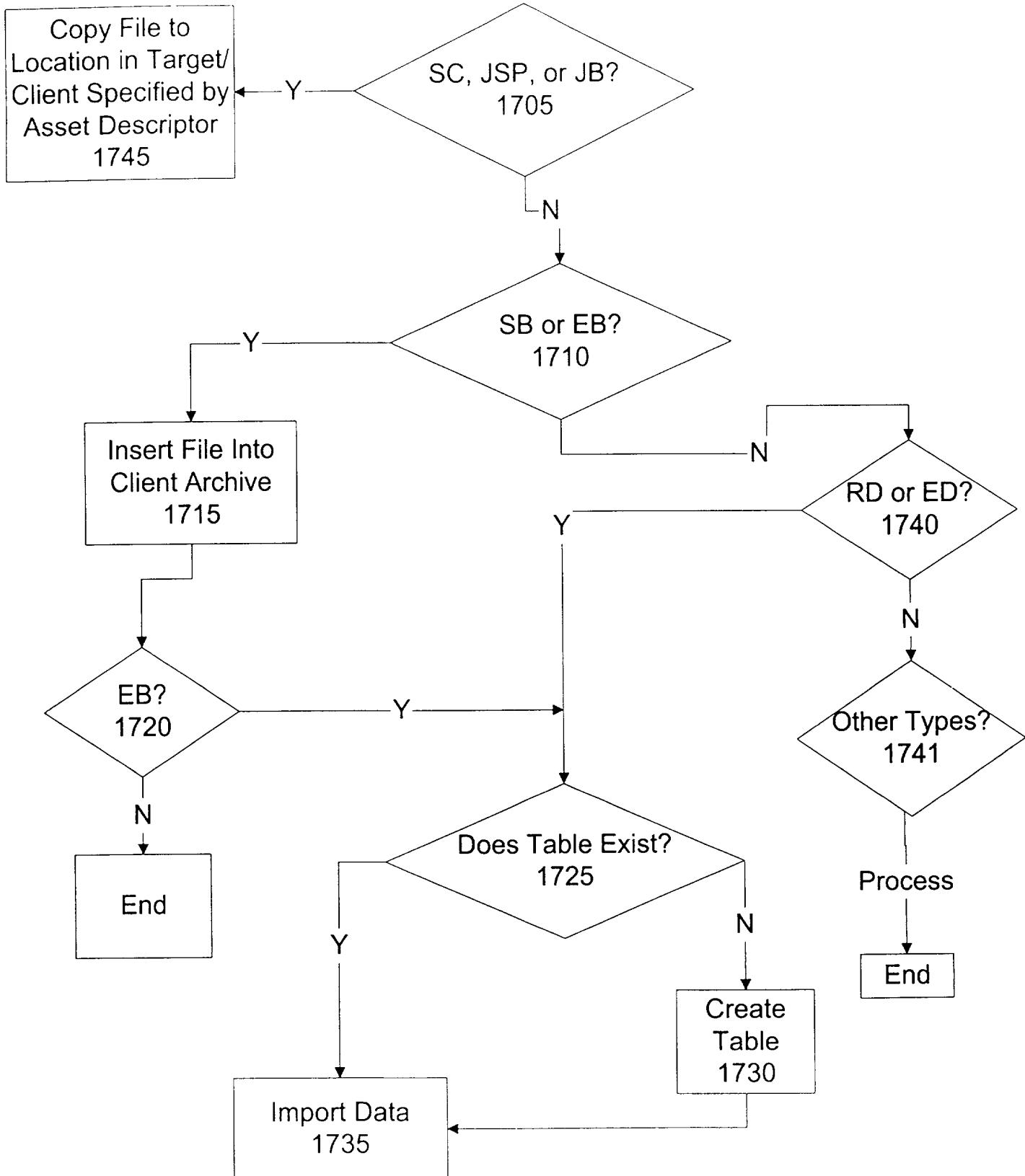


FIG. 16B
SHEET 1



**FIG. 16B
SHEET 2**

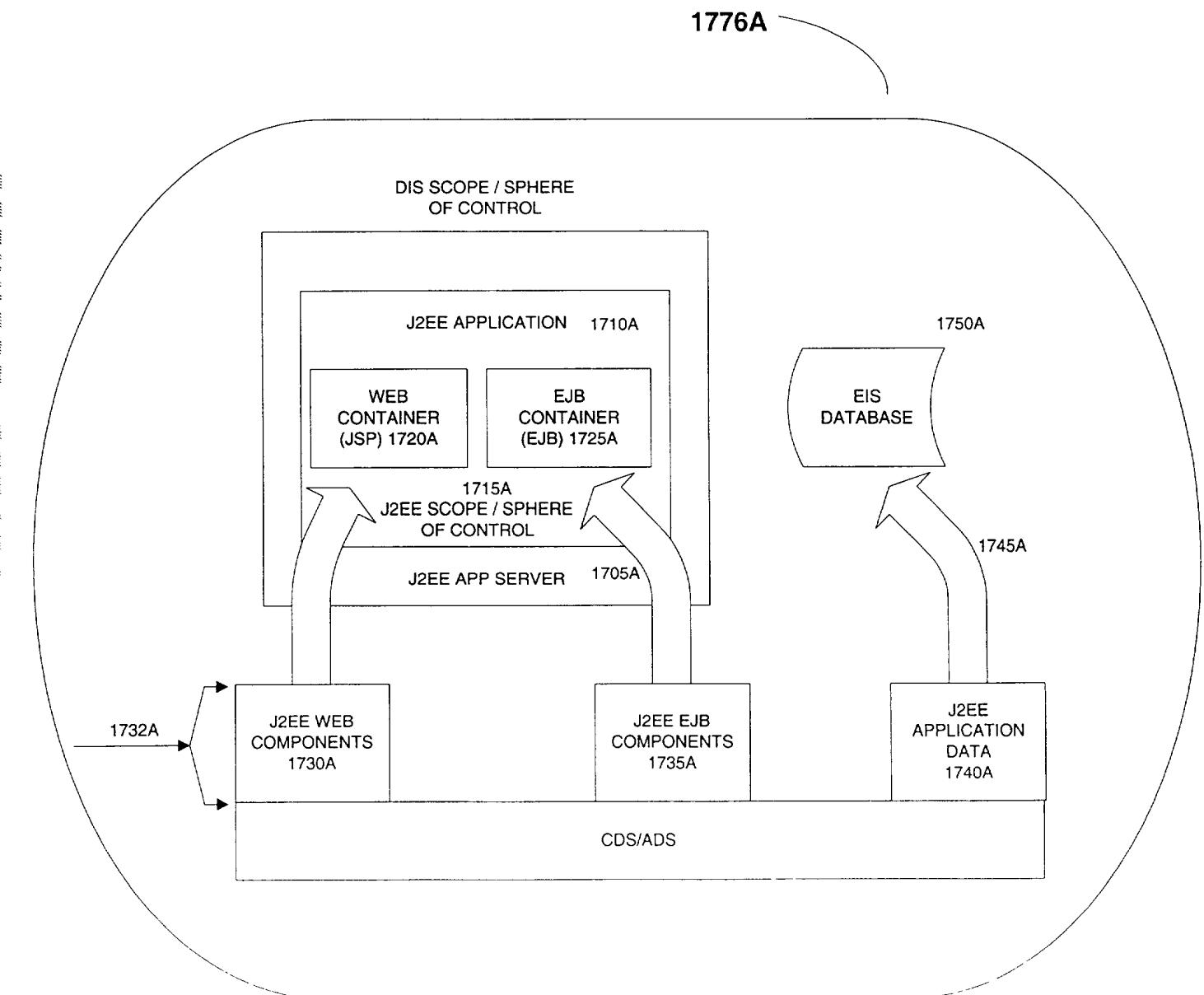


Deploy Adapter Method

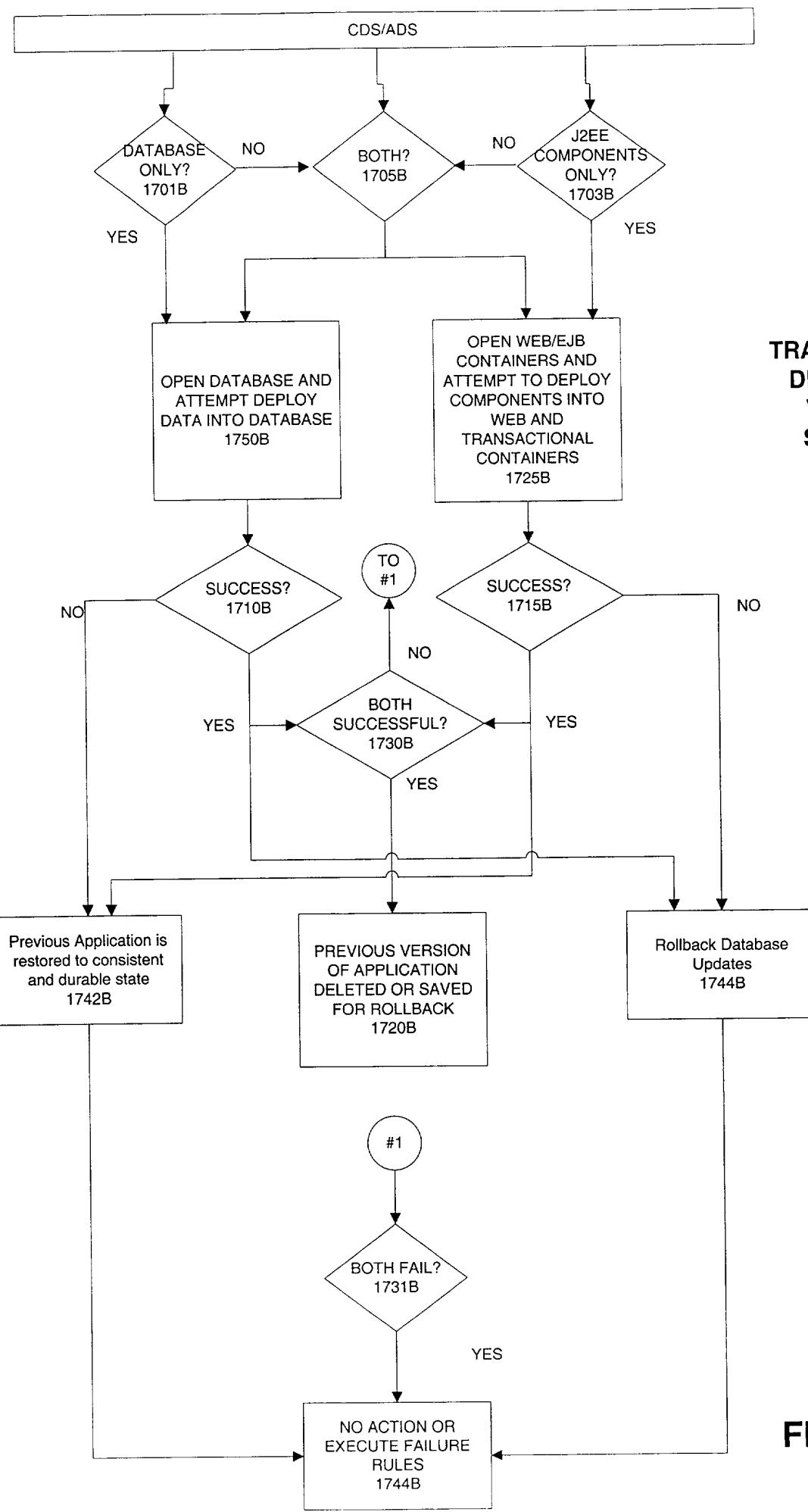
Figure 17

1700A

**DIS TRANSACTIONAL
DEPLOYMENT SPHERE OF
CONTROL**

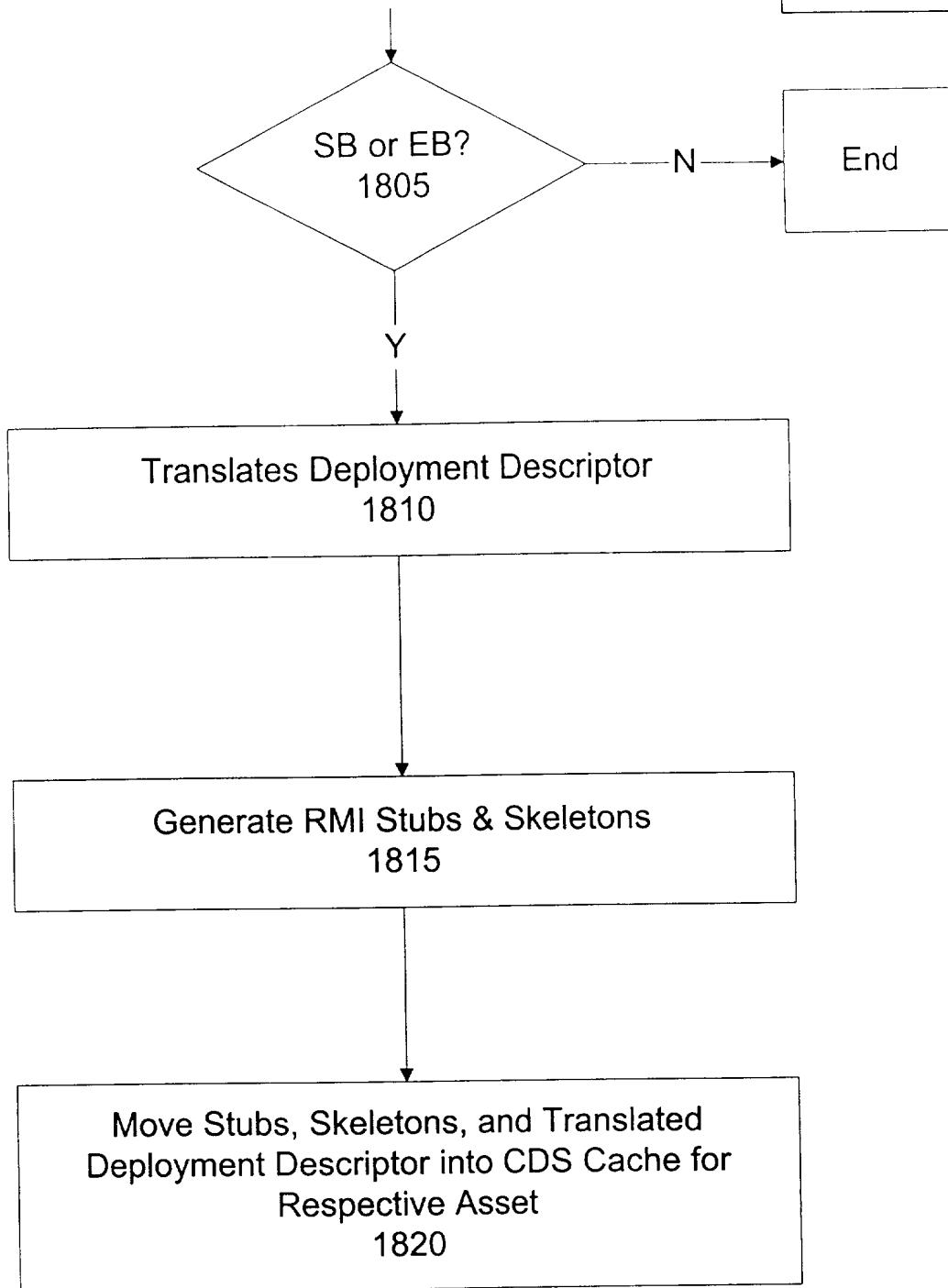


**FIGURE
17A**



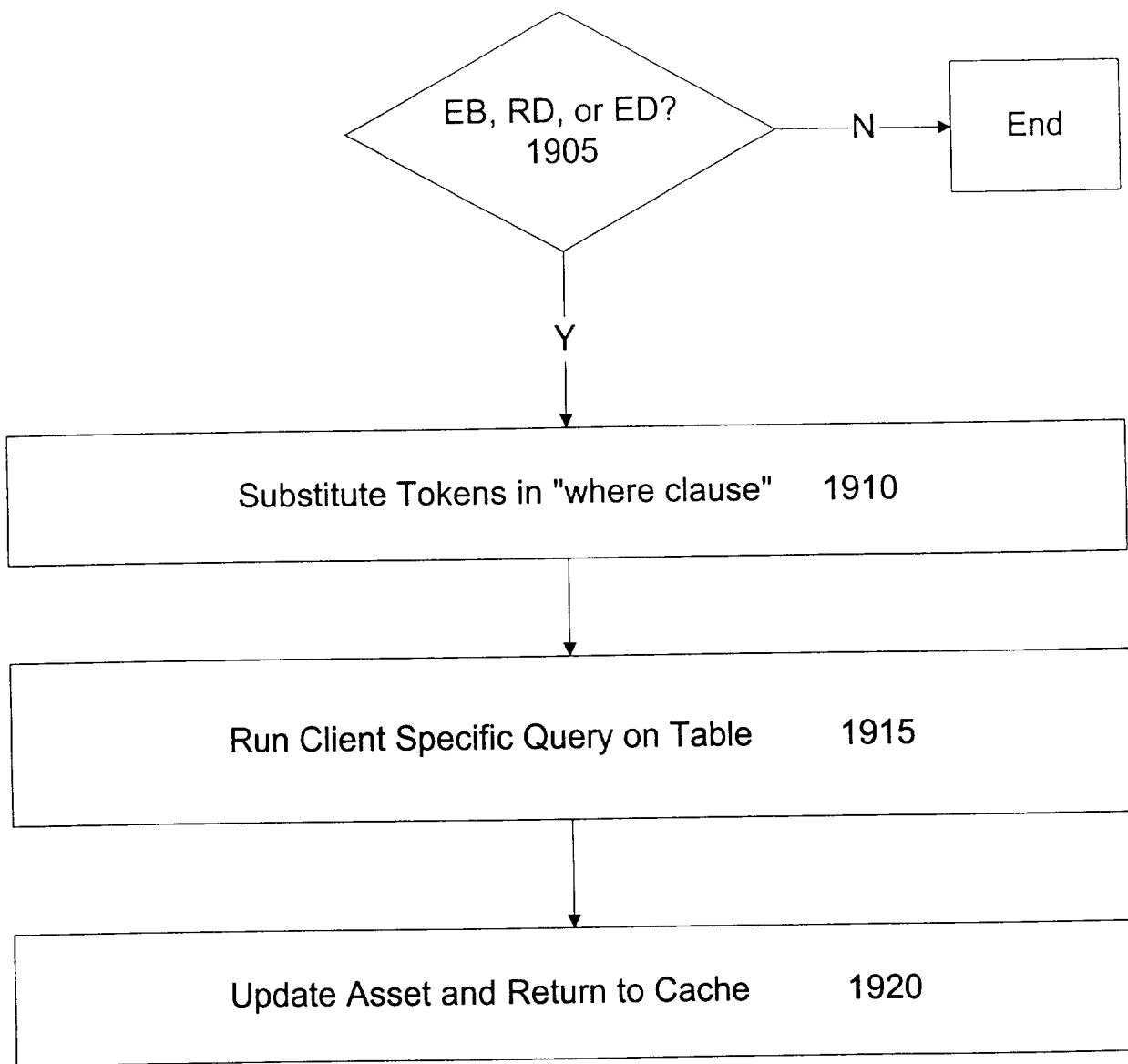
1700B
TRANSACTIONAL
DEPLOYMENT
WITHIN DIS
SPHERE OF
CONTROL

FIGURE
17B



Process Adapter Method

Figure 18



Target Adapter Method

Figure 19

Receive Call For Synch with
Argument Data 2010

2000

Select Adapter Based on Asset Type And
Pass Argument Data 2020

ED or EB?
2030

No

END

Yes

Rcv Synch Info From Target for
Asso Table 2040

Xfer Updated Asset to CDS
from Target 2050

Determine Proper Source 2060

To Sheet 2

Synchronize Asset Adapter Process

Figure 20 - Sheet 1

From Sheet 1

2000

Send Synch Asset to Source 2070

Select Source Adaptor by
Asset Type 2080

ED or EB?
2095

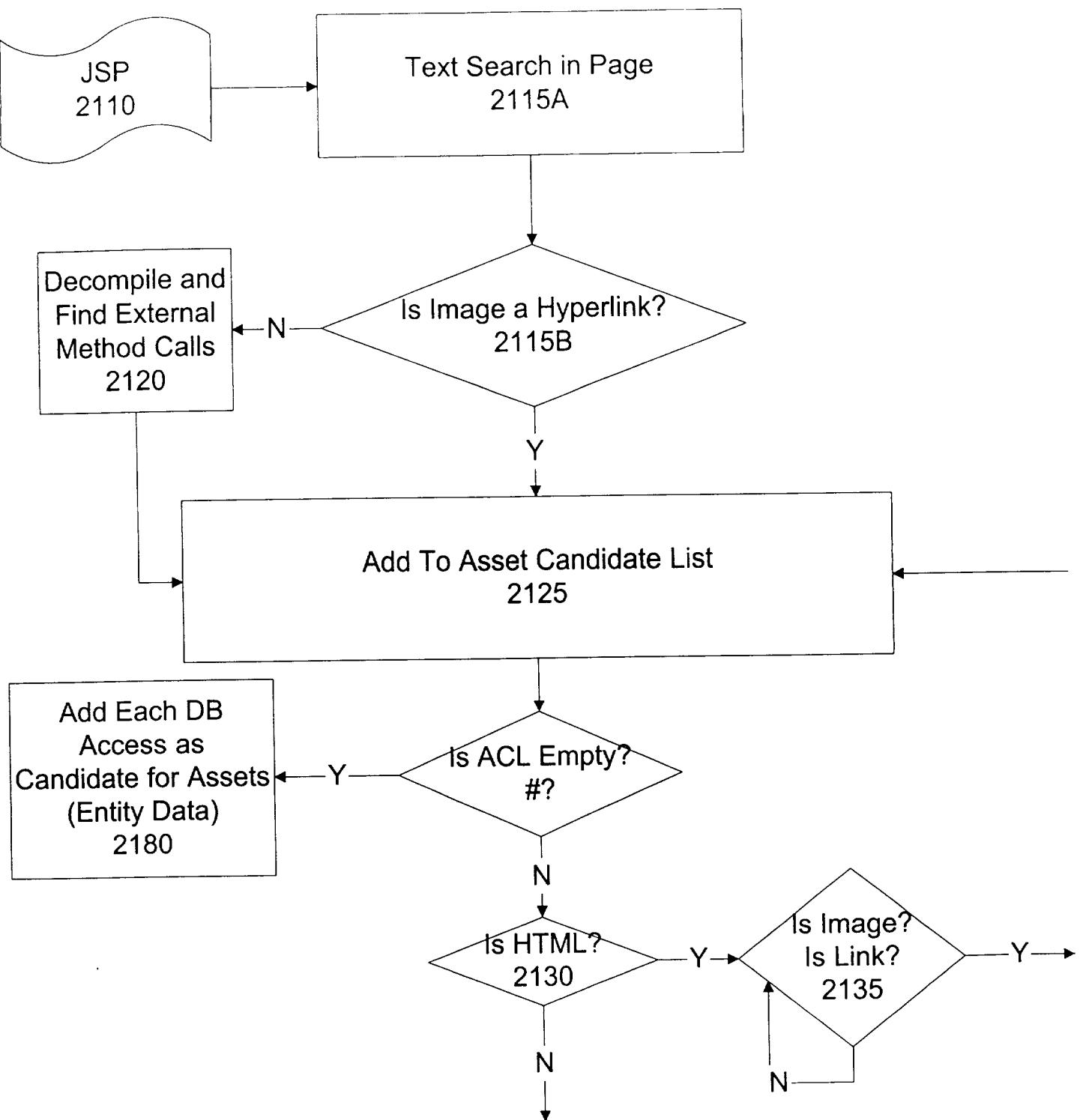
NO

End

Update LD and/or EE
at Source 2095

Synchronize Asset Adapter Process

Figure 20 - Sheet 2



To Sheet 2

From Sheet 2

Discovery Asset Adapter Method

Figure 21 - Sheet 1

From Sheet 1

To Sheet 1

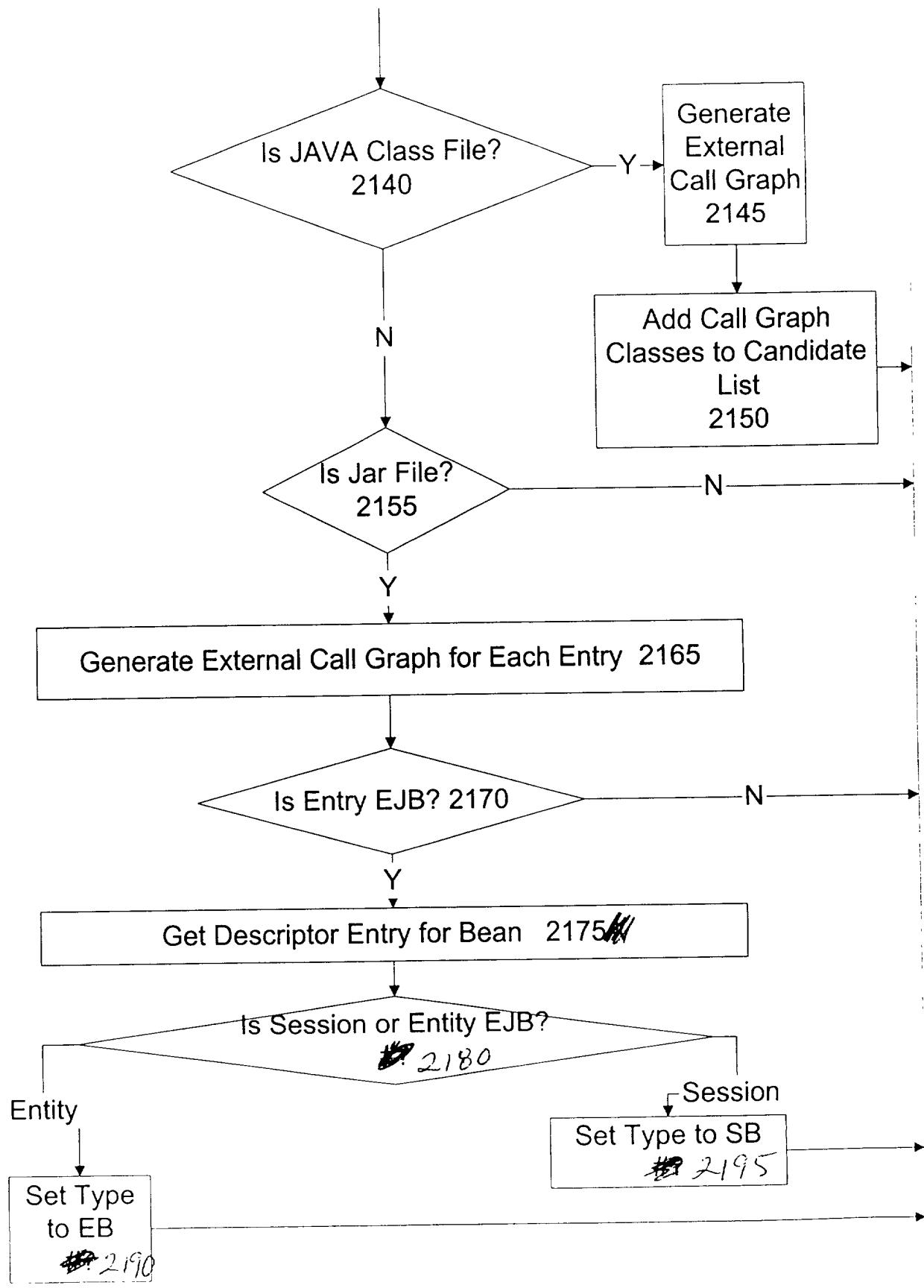
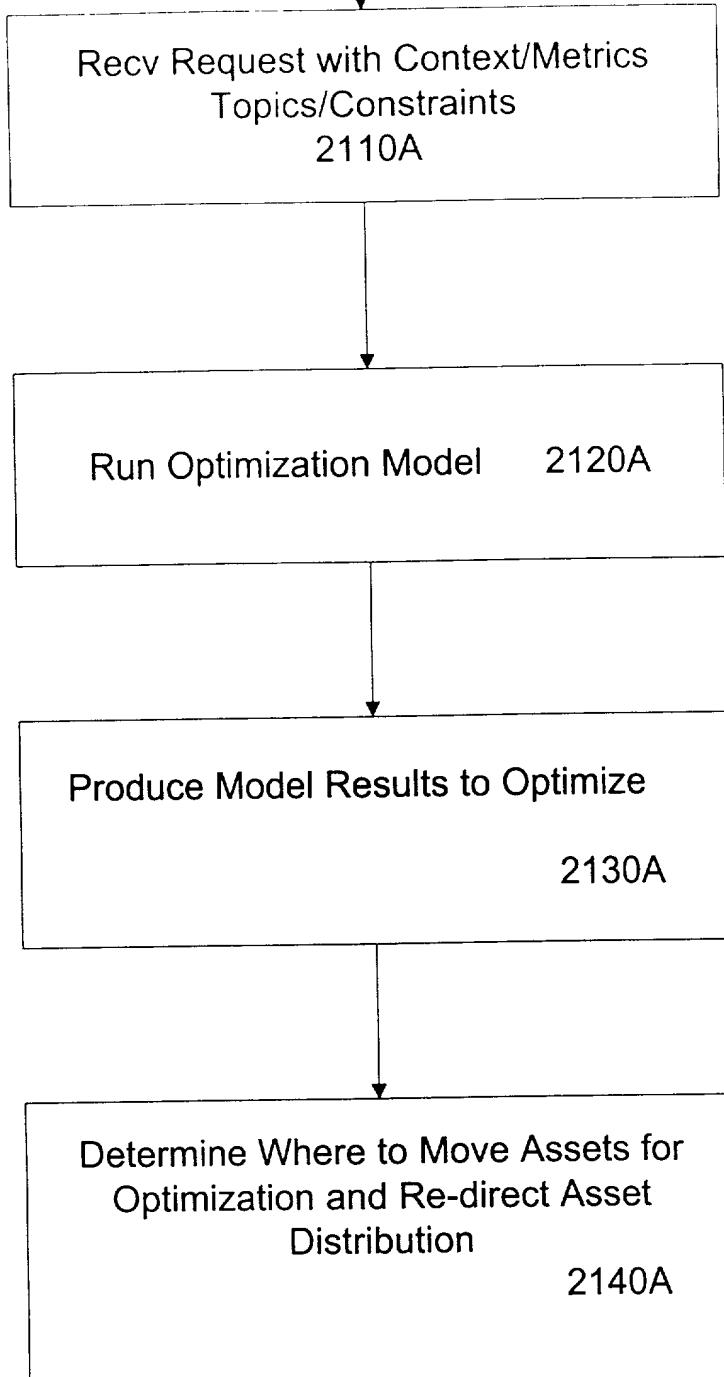


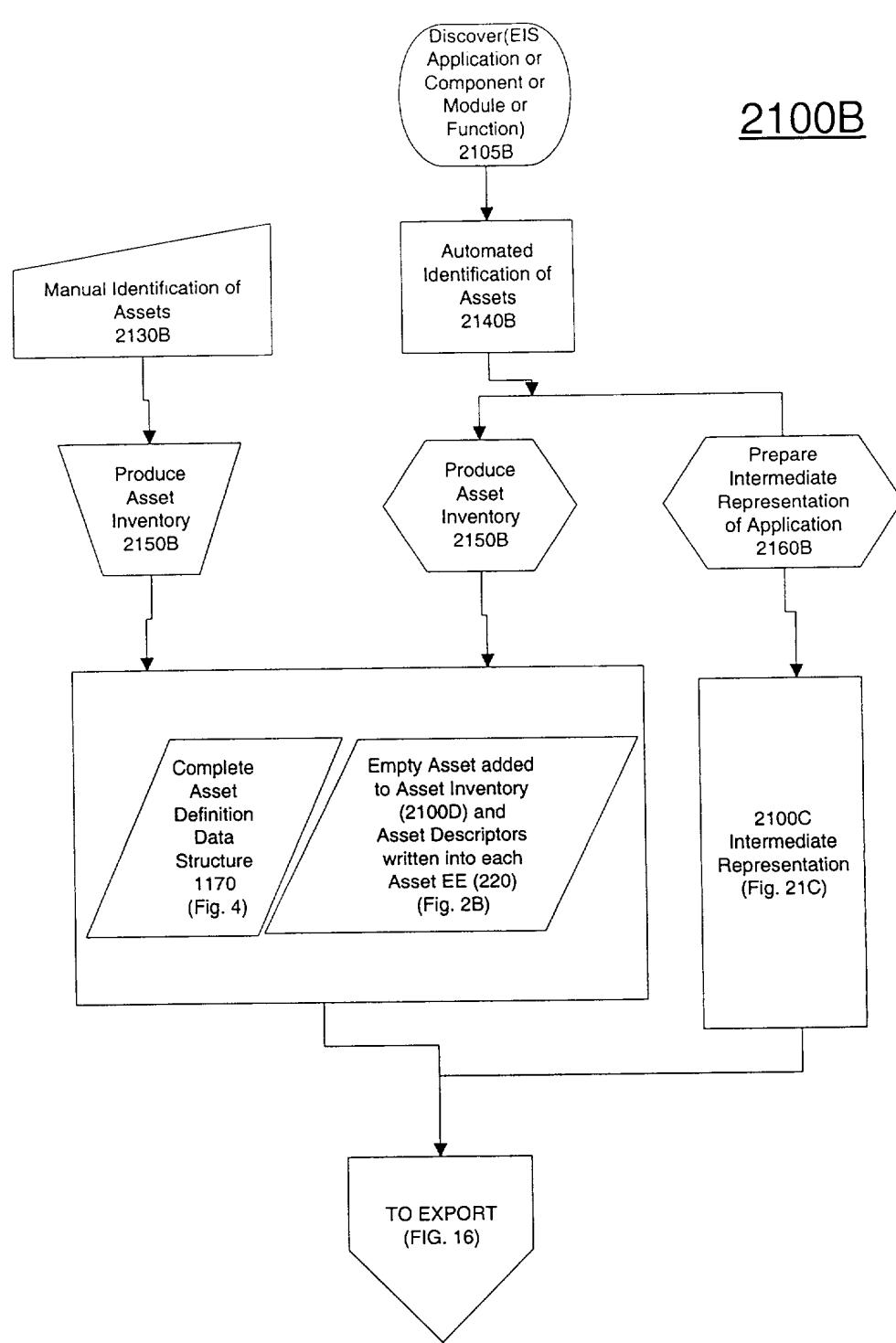
Figure 21-Sheet 2



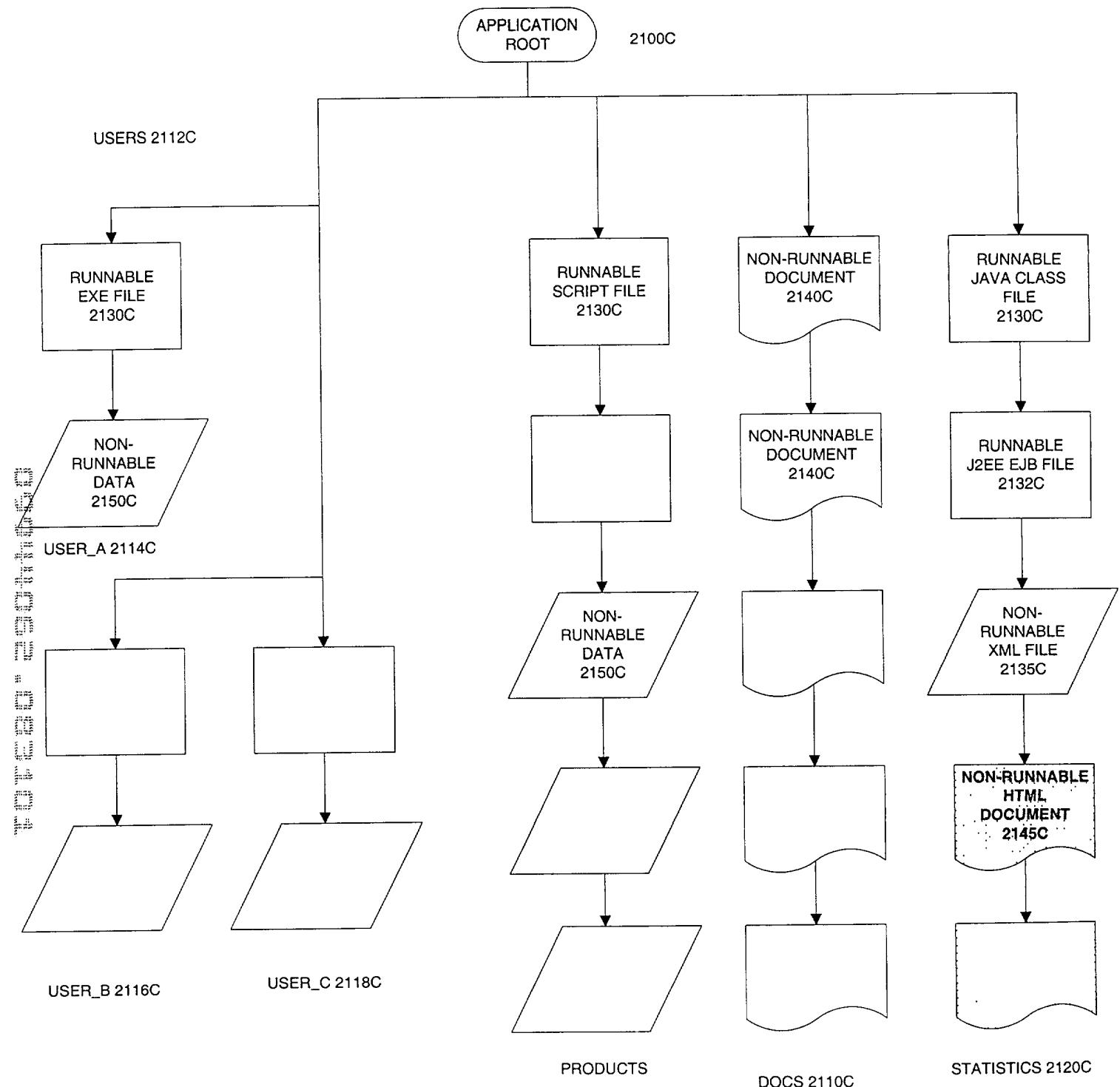
Adjustment Asset Adapter Process

Figure 21A

2100B



**FIGURE
21B**



PRIOR ART

**FIGURE
21C**

2100D

EE 220	ASSET INTERFACE 230 (OPTIONAL)	LOGIC/ DATA (LD) 210



**FIGURE
21D**

2200

Rcv Request and Initiate Discover Process Until Terminate

2205

Rcv Request and Initiate Version Process Until Terminate

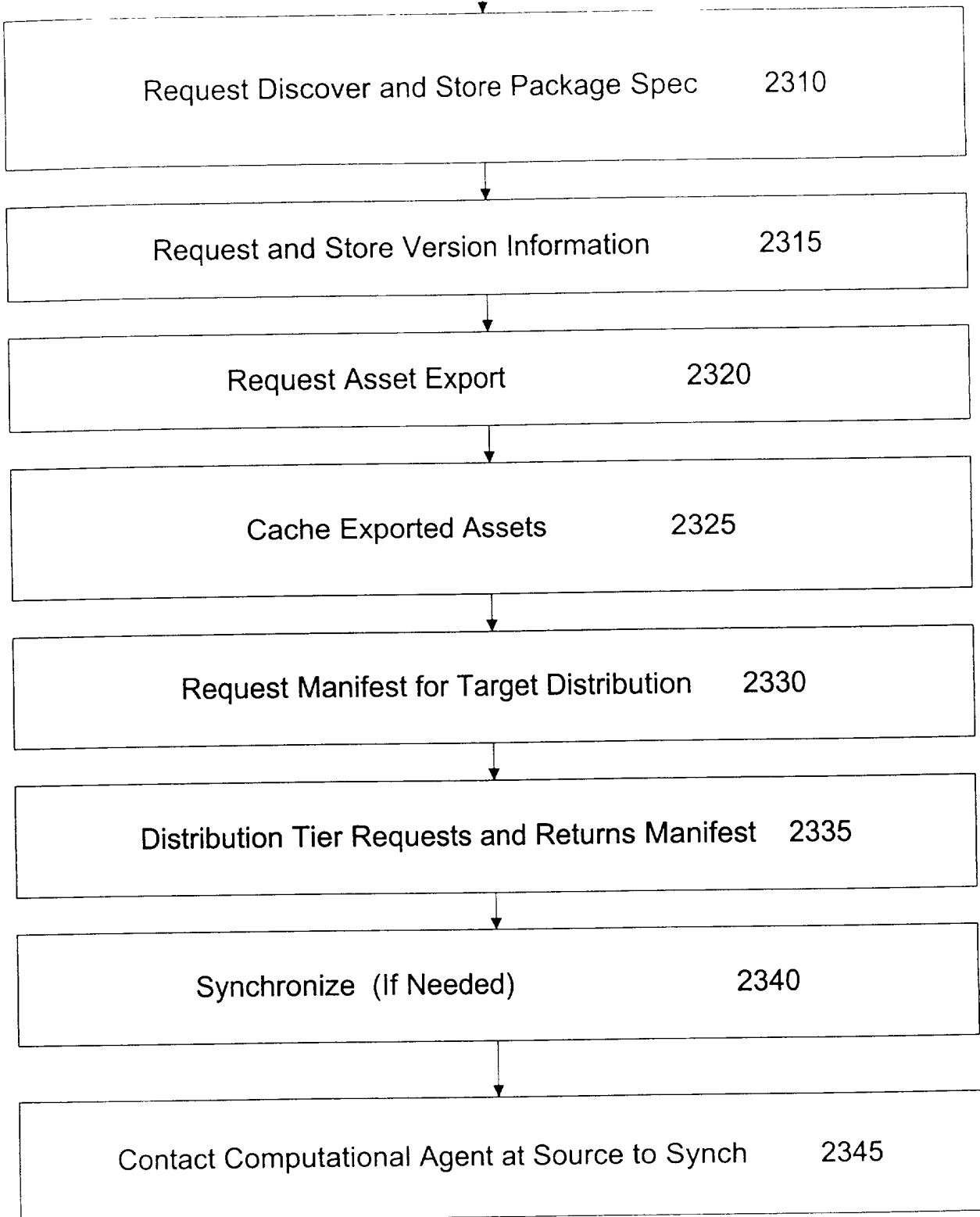
2210

Rcv Request and Initiate Export Process Until Terminate

2215

Publishing Agent Method

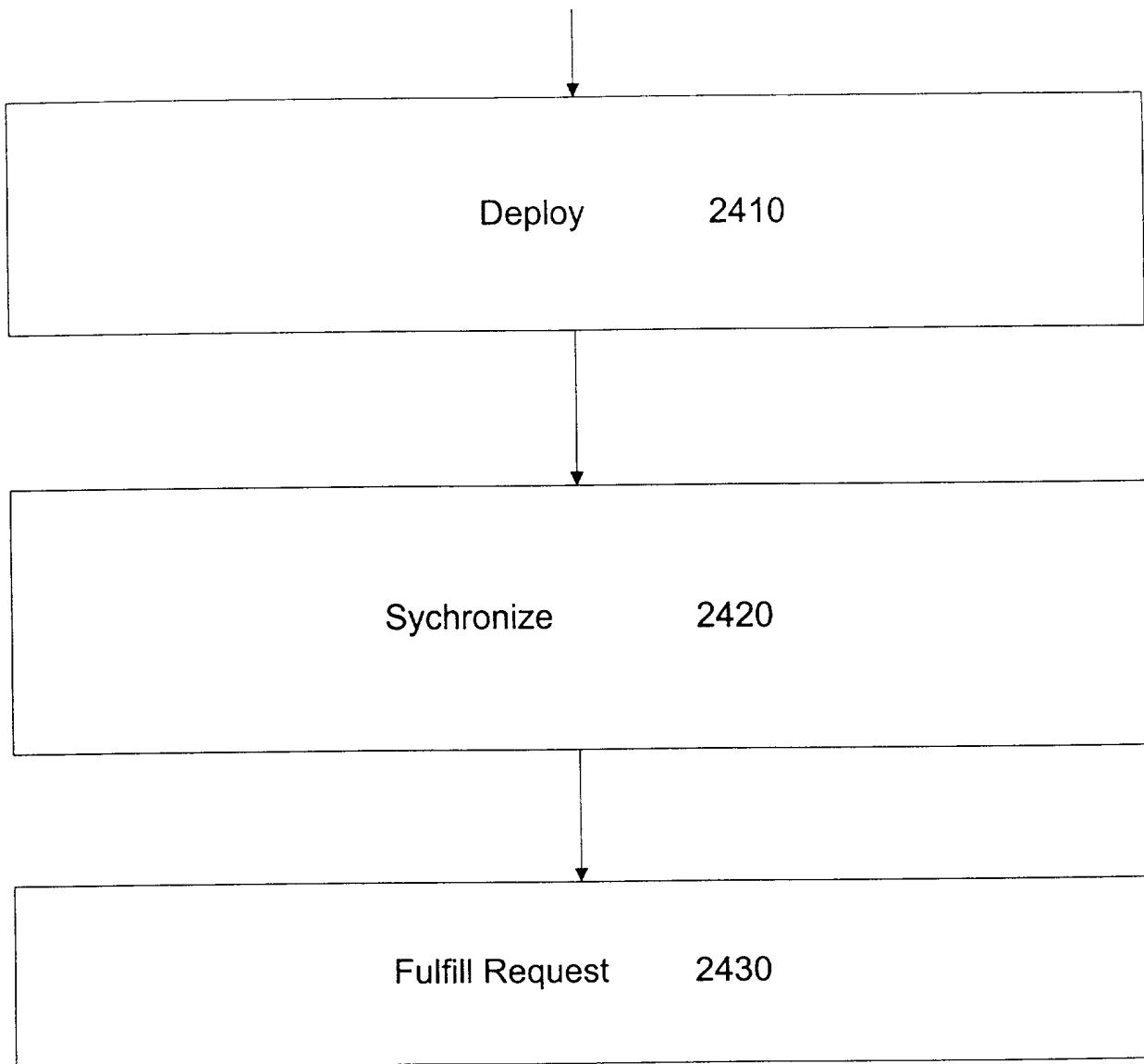
Figure 22



Subscriber Agent Method

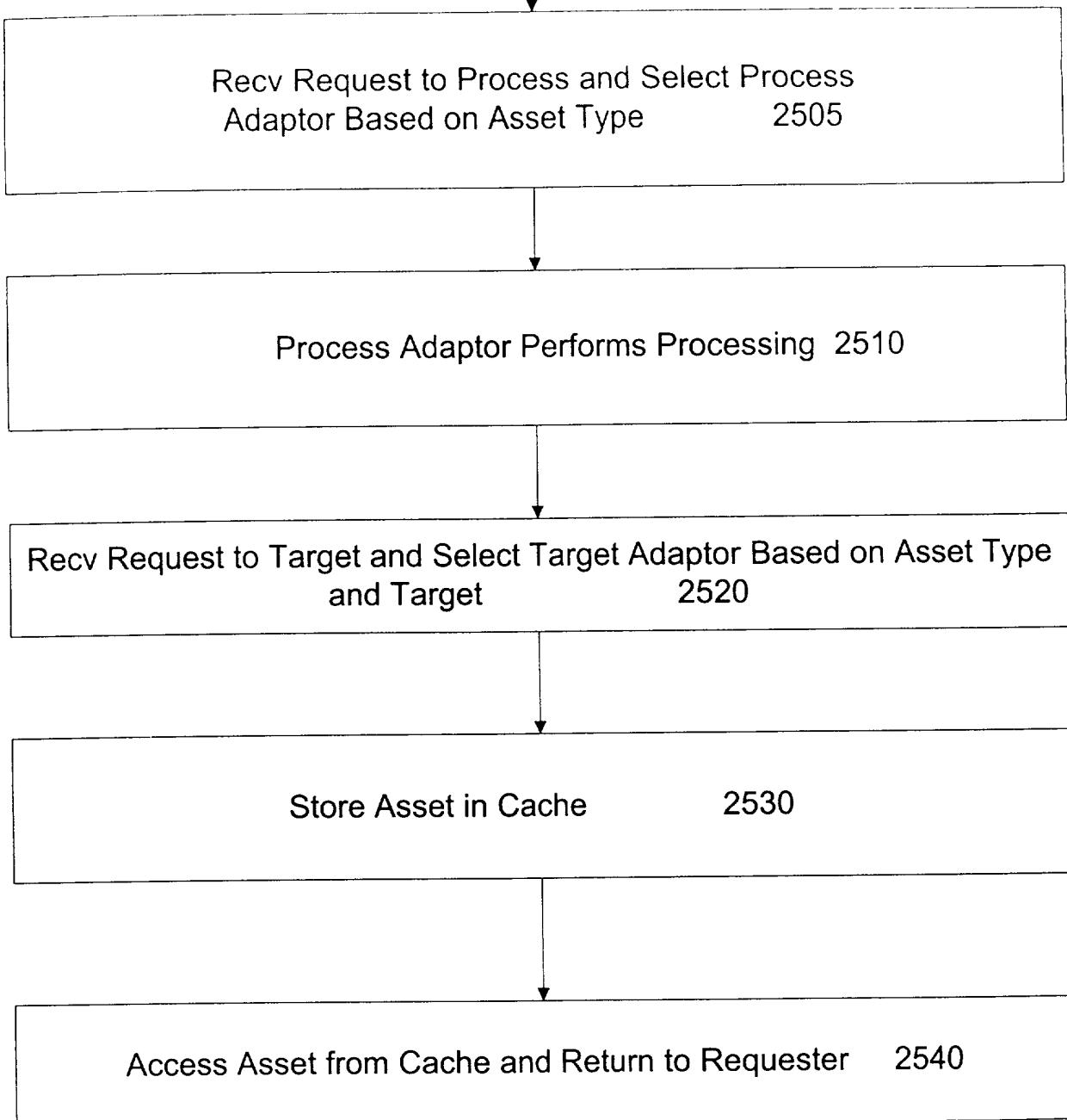
Figure 23

2400



Computational Agent Method

Figure 24



Caching Agent Method

Figure 25

Determine (Adapter/Agent) Assets Needed for Each Asset Type 2605

Determine Needed Assets Not Located in Current Node 2610

Request Distribution of Missing Assets 2615

Determine Base Applications Needed for Asset Types 2620

Determine Missing Base Applications 2625

Request Distribution of Packages with Missing Base Applications 2630

Service Next Request 2640

System Asset Distribution Process

Figure 26

Determine Current Asset Should Be Streamed/Updated
2705

2700

Frame

Delta

Generate Frame or Delta?

Export Frame Asset (Asset)
2710

Generate Delta
2715

Export Delta (as Asset)
2720

Process as
General Asset
2726

No

Streaming Asset?
2725

Yes

Frame

Delta

Frame or Delta Asset?
2730

Find and Mark Last Frame
and Deltas 2735

Cache Delta in Asset Cache
2740

Resume Normal Procession
2745

Process Request for Streaming Asset?
2750

Yes
To 2755

No
To 1800

Figure 27- Sheet 1

2700

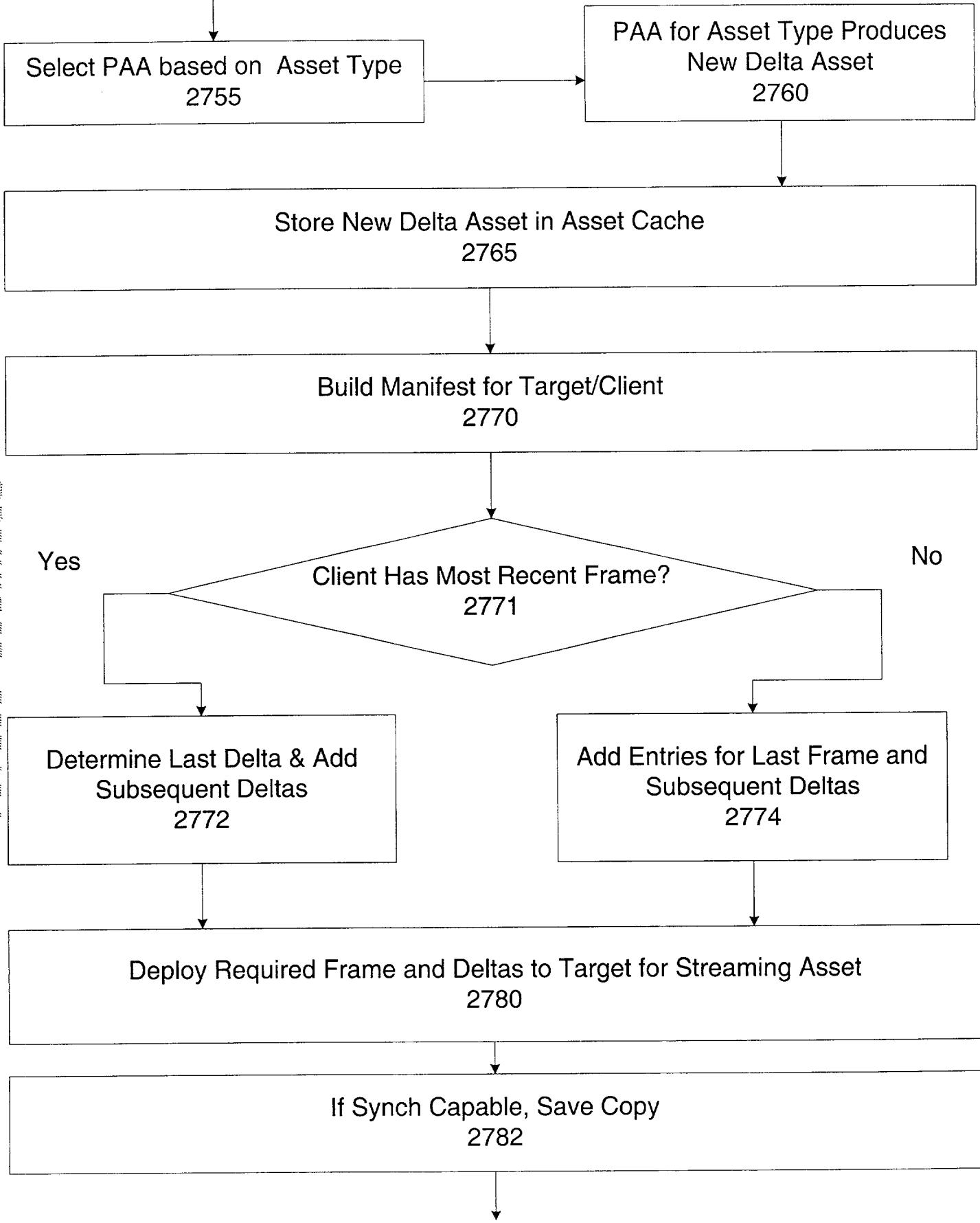


Figure 27-Sheet 2

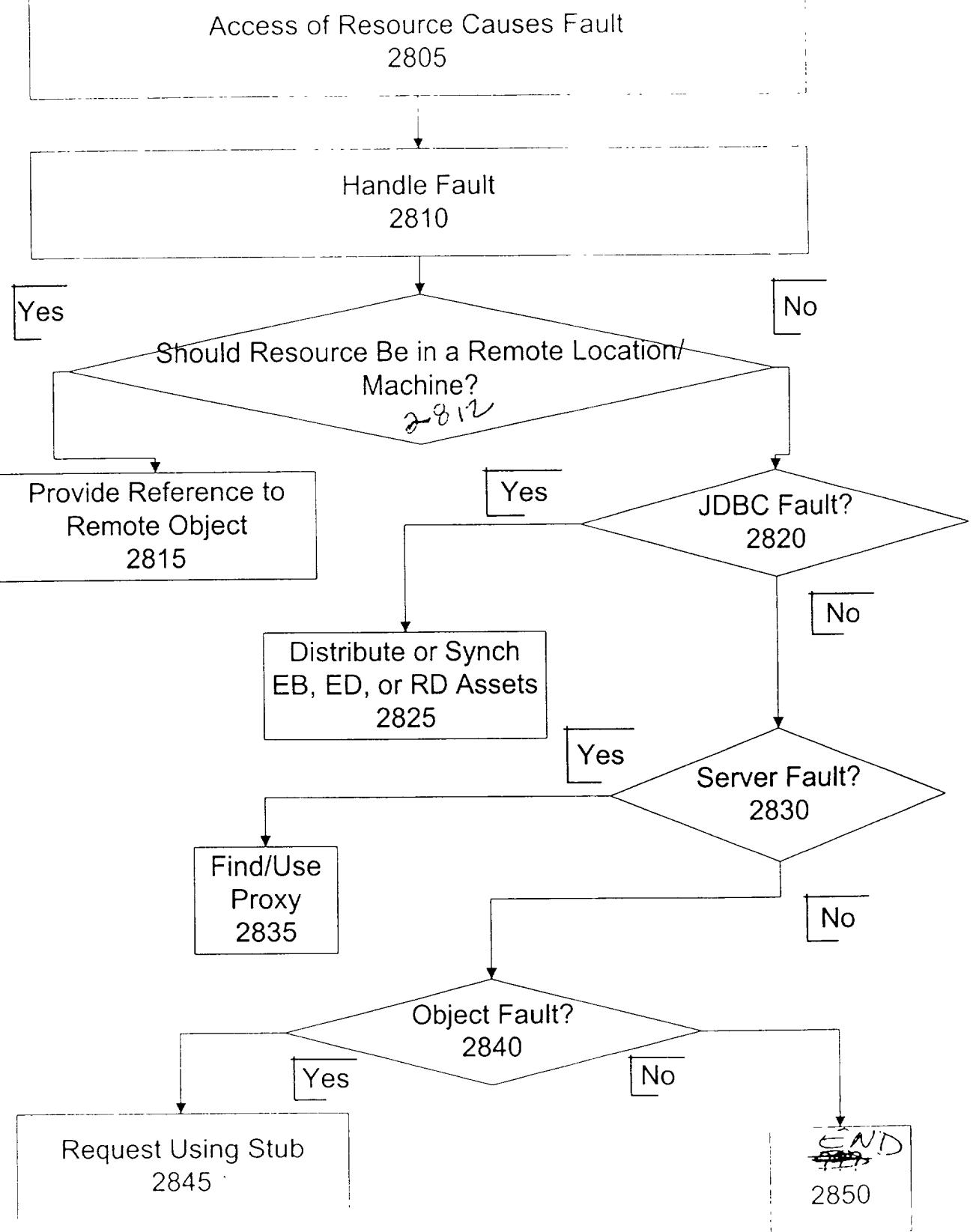
Synchronize Target Assets with Source Assets by Asset Type
2784

If a Streaming Asset, Create a Delta Synchronization Asset
2786

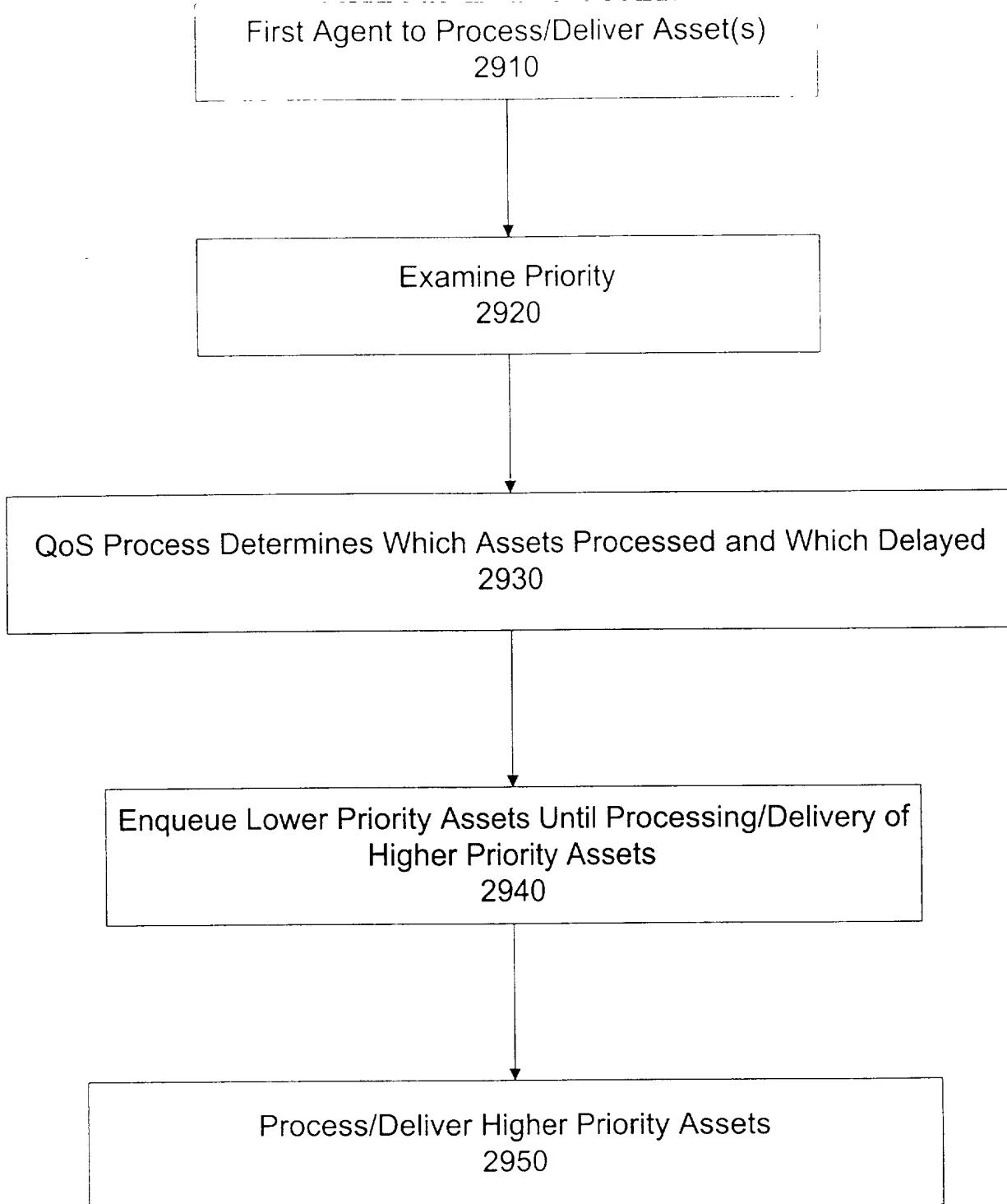
Synchronize Asset
2788

Apply Synchronization Information to Source
2790

Figure 27 - Sheet 3

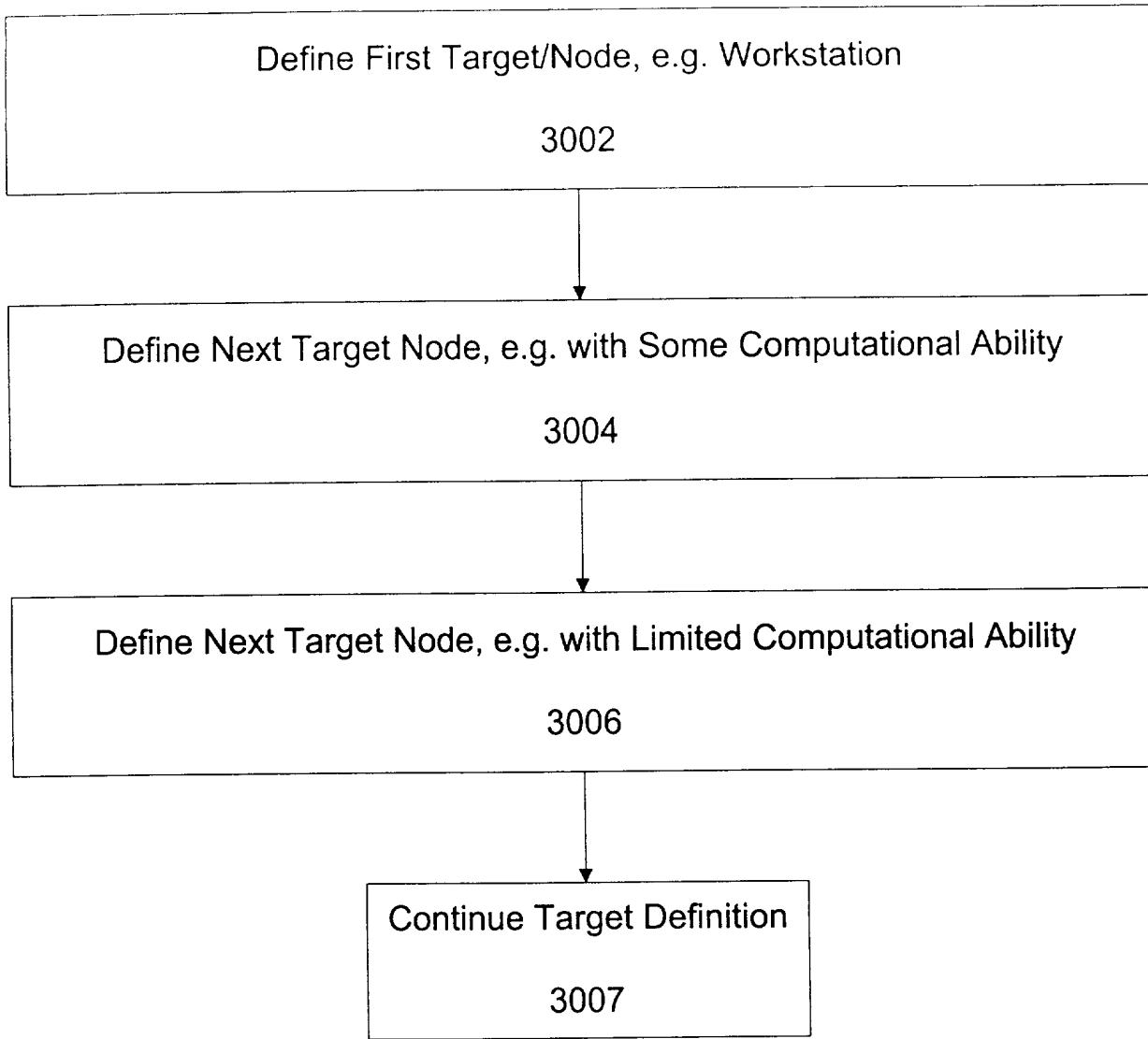


Bridging Process
Figure 28



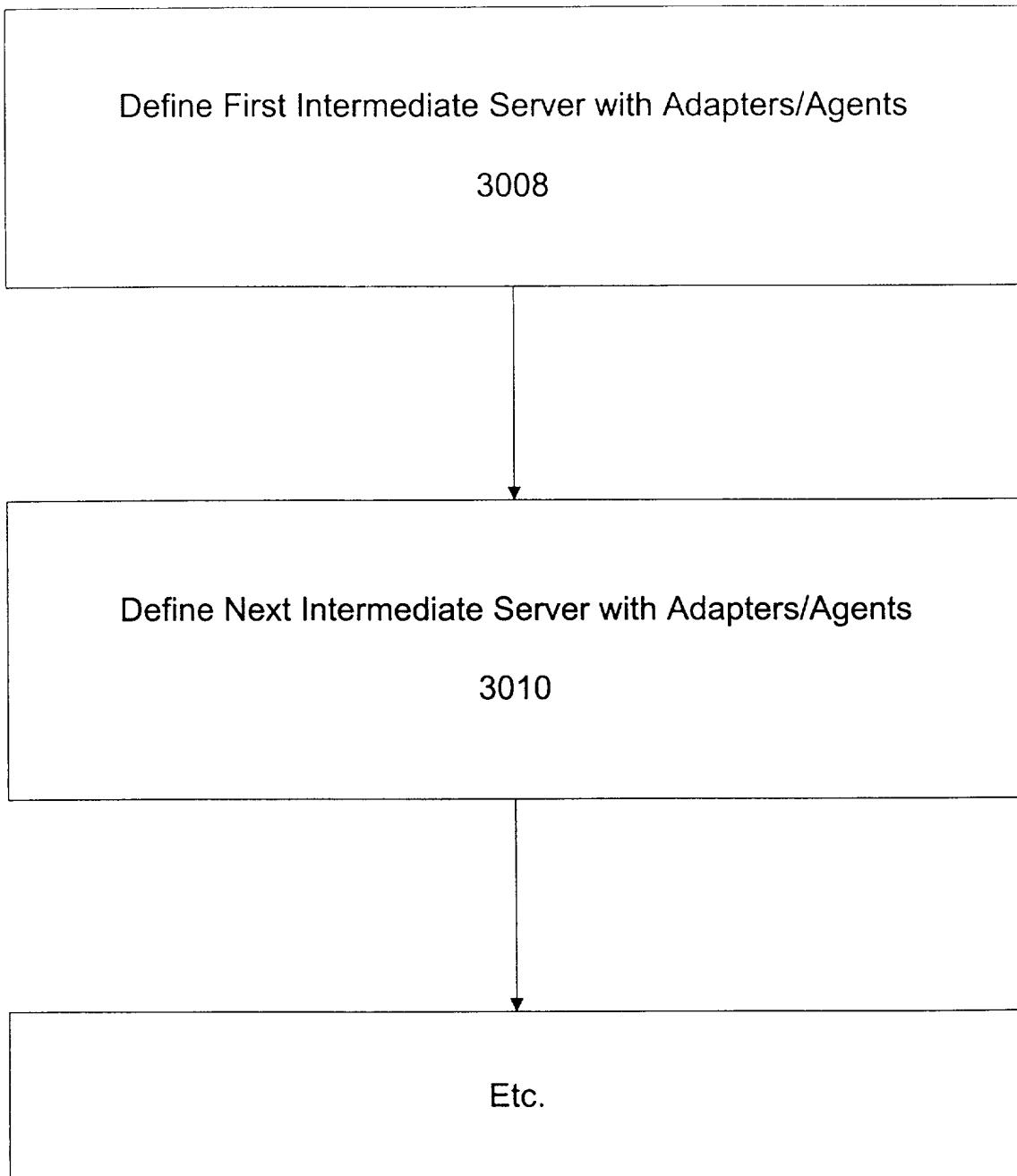
QoS

Figure 29



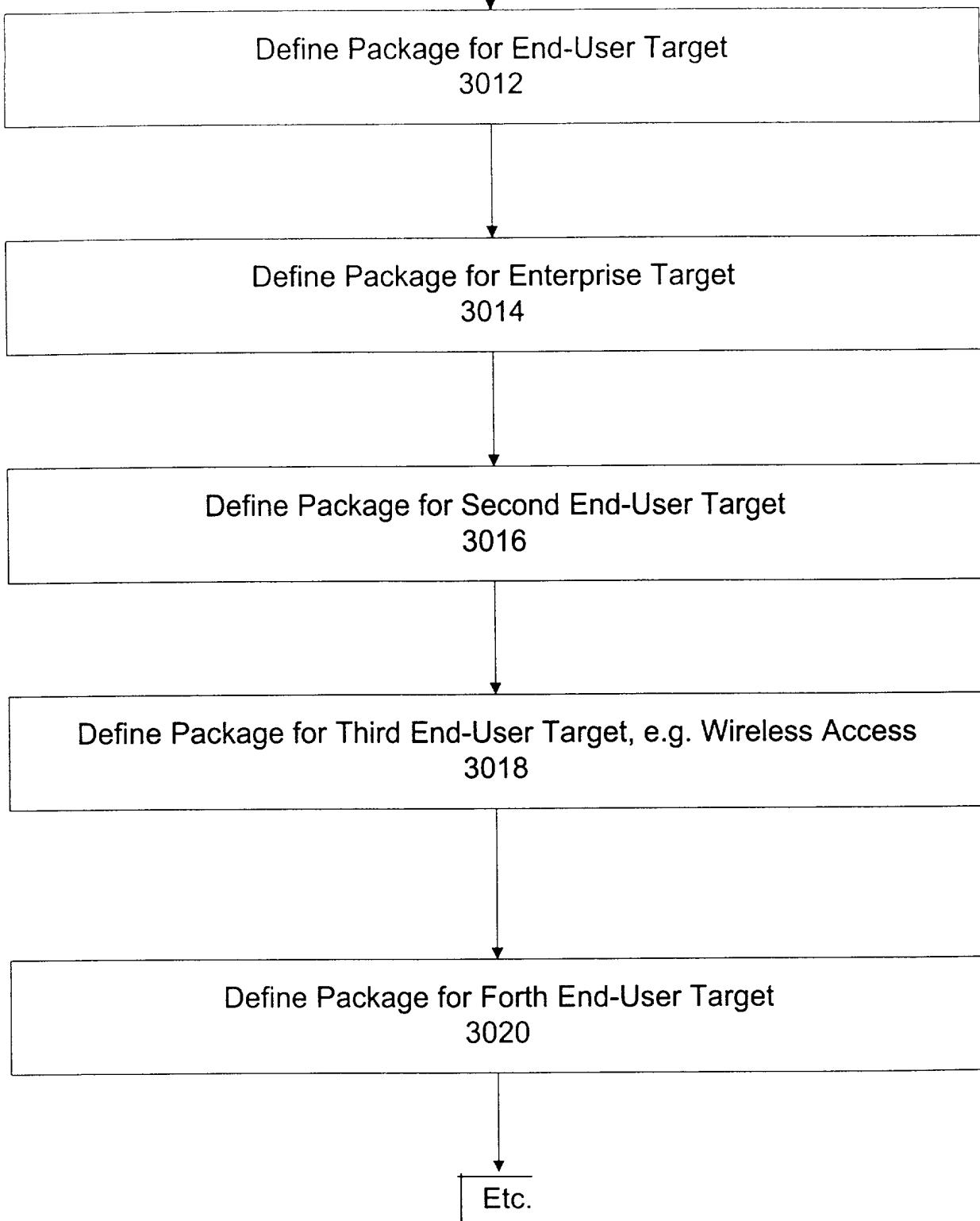
Target/Client Definition

Figure 30A



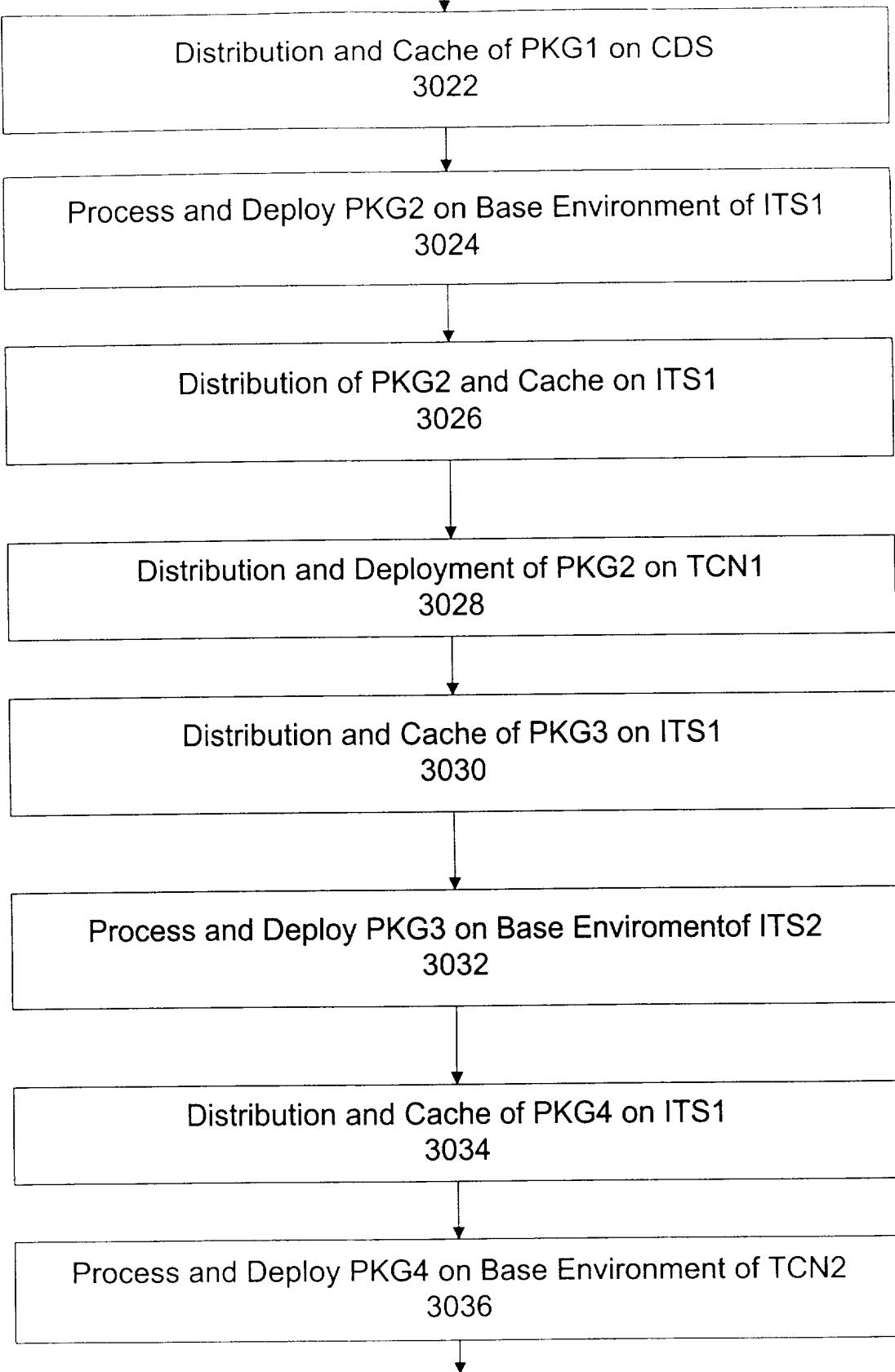
Server Definition

Figure 30B



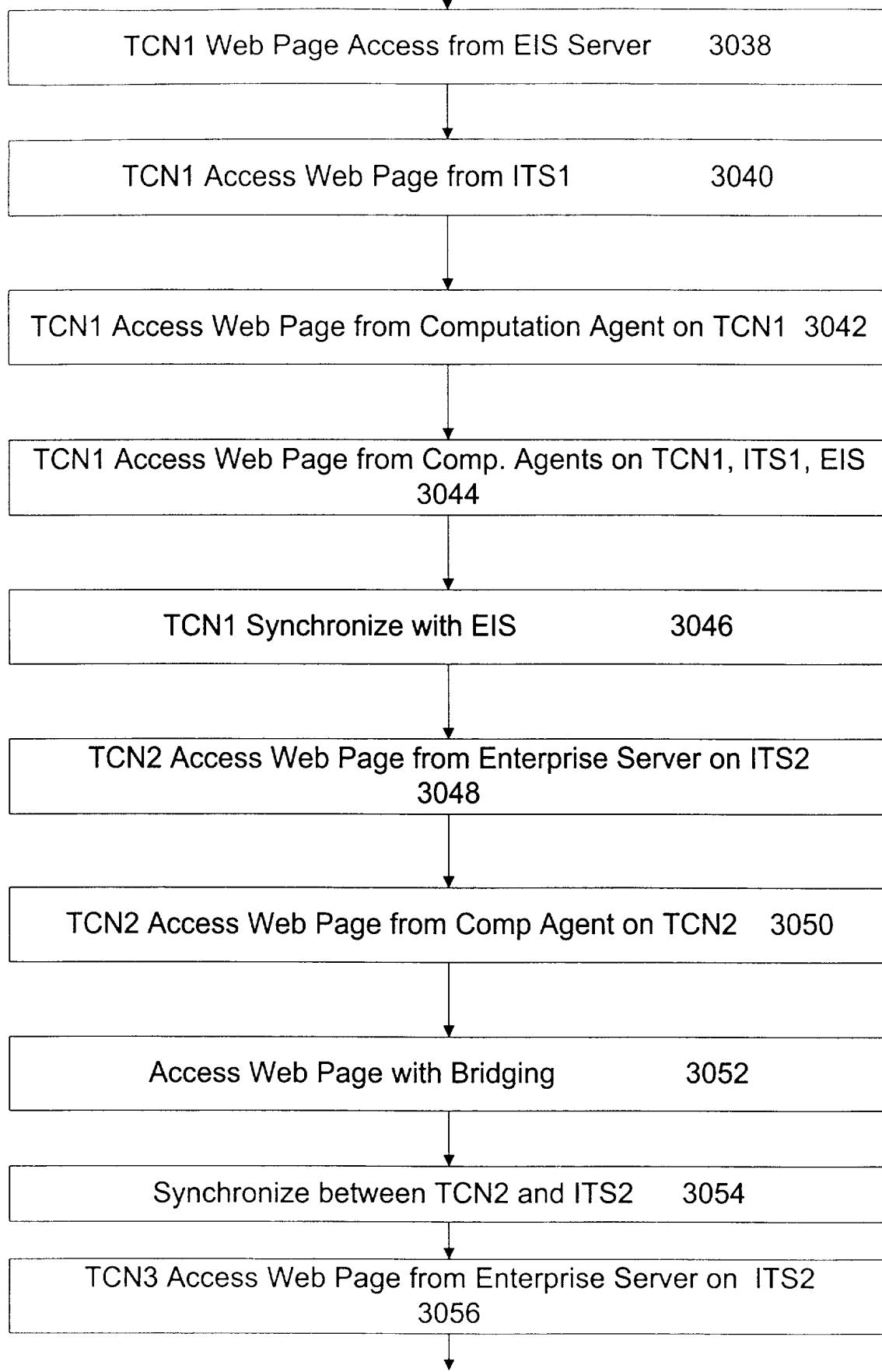
Define Packages/Applications

Figure 30C



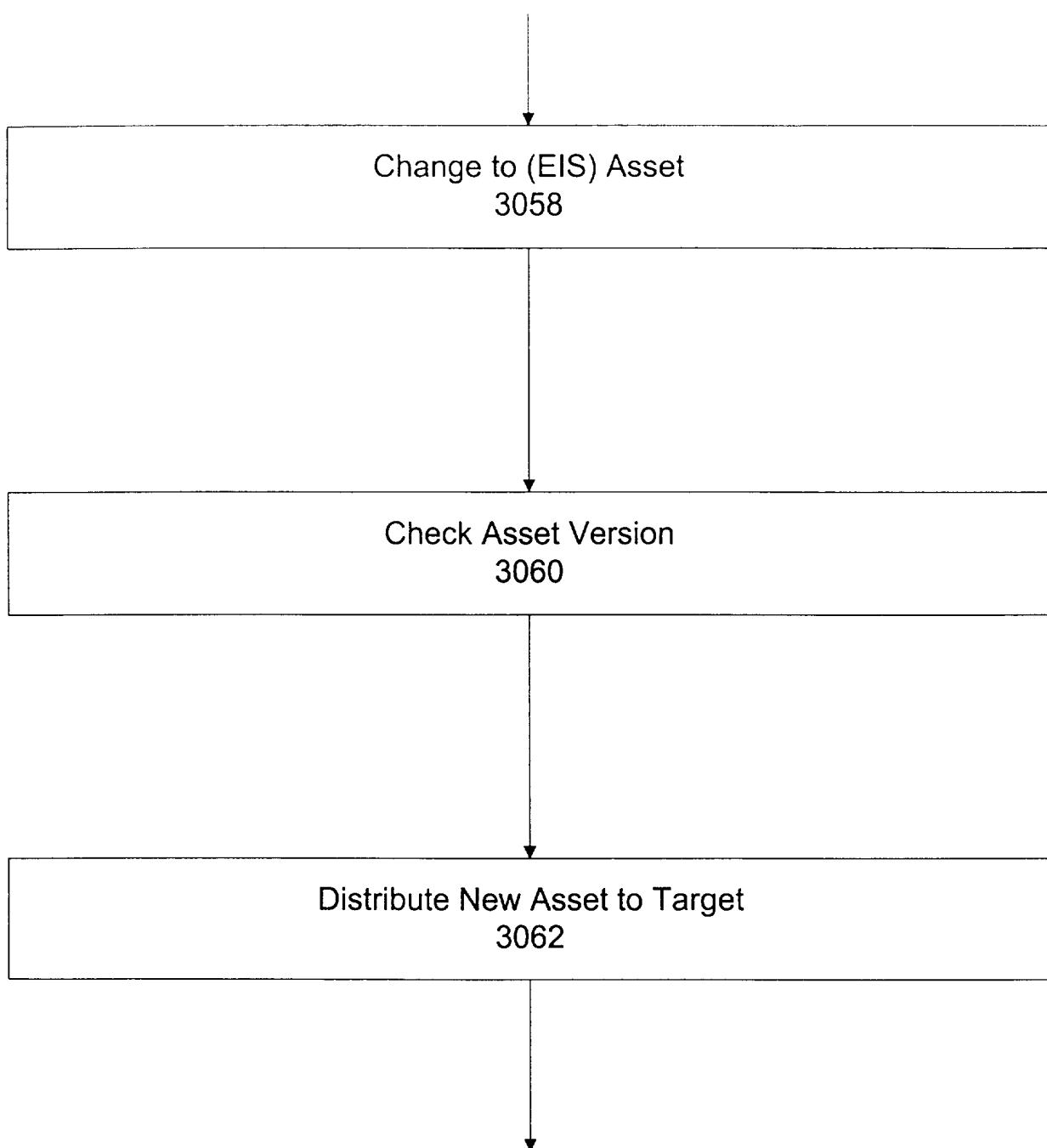
Distributing to Computational Environments

Figure 30D



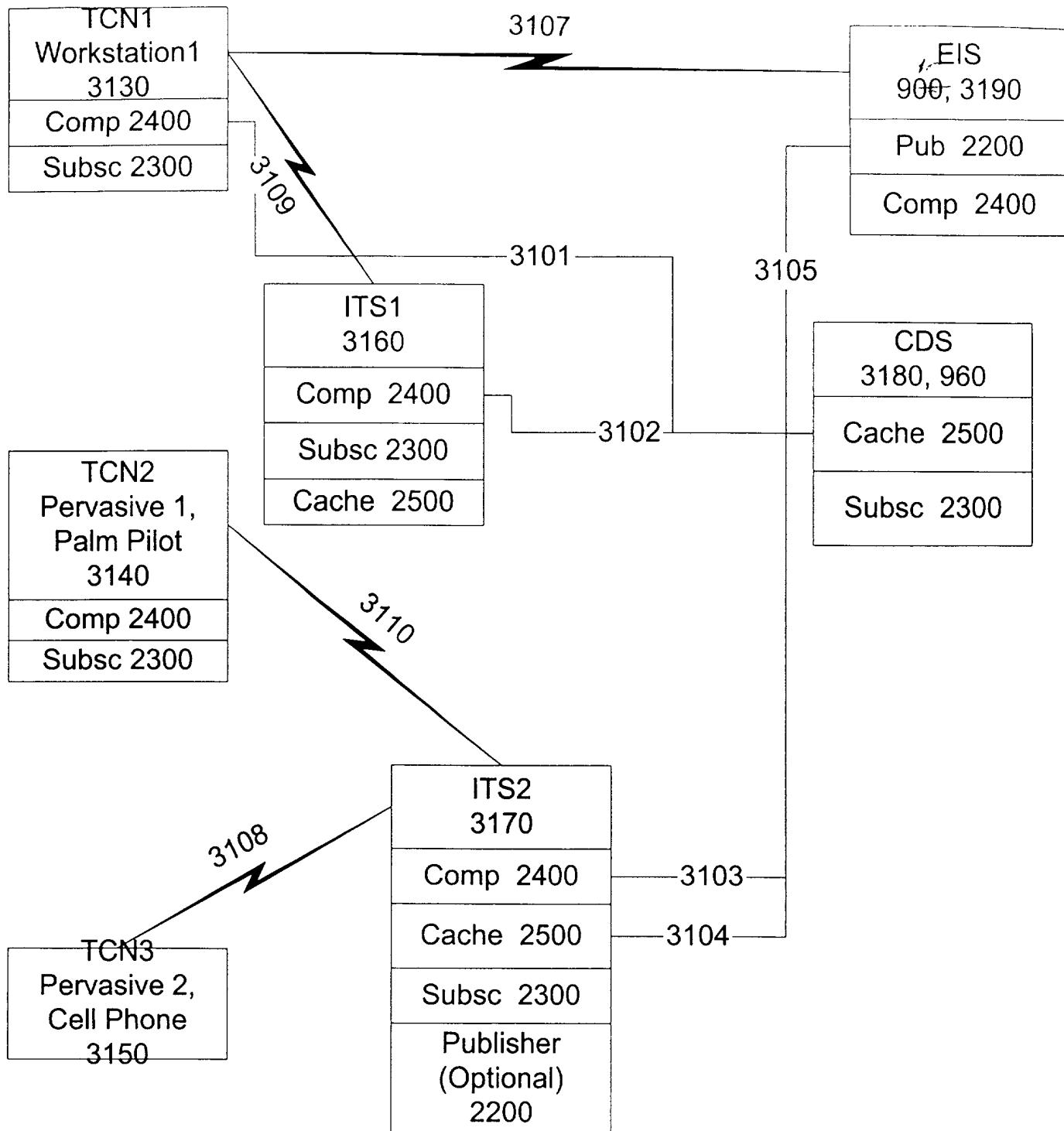
Distributed Execution of Assets

Figure 30E



Distribution of Current Assets

Figure 30F



Example Network Connections and Asset Distribution

Figure 31